This is to certify that the

thesis entitled

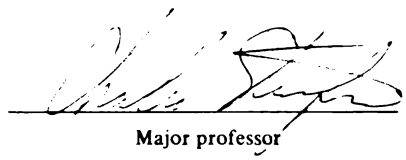
THE TRINITY OF TRANSBORDER DATA FLOW, BRAZIL AND THE GENERAL AGREEMENT ON TARIFFS AND TRADE

presented by

GREGORY RICHARD VIGGIANO

has been accepted towards fulfillment
of the requirements for

Masters of Arts degree in Telecommunication



Major professor

Date November 3, 1989

THE TRINITY OF TRANSBORDER DATA FLOW, BRAZIL AND THE GENERAL AGREEMENT ON TARIFFS AND TRADE

By

Gregory Richard Viggiano

A THESIS

Submitted to
Michigan State University
in partial fulfillment of the requirements
for the degree of

MASTER OF ARTS

Department of Telecommunication

1989

ABSTRACT

THE TRINITY OF TRANSBORDER DATA FLOW, BRAZIL AND THE GENERAL AGREEMENT ON TARIFFS AND TRADE

By

Gregory Richard Viggiano

Brazil is taking an active role regulating the flow of information crossing its borders. The motivation behind Brazil's new telecommunication laws come from the desire to protect its emerging informatics sector. These policies have created a market reserve system requiring multinational corporations operating in Brazil to use Brazilian facilities before receiving permission to import any foreign telecommunication goods or services. U.S. Companies have cited this system as a violation of the General Agreement on Tariffs and Trade.

Brazil's infant informatics industry is trying to shift the origination points for equipment manufacture and the foreign data processing sites to the local market. By erecting trade barriers, Brazil may succeed in making it more cost efficient for multinational corporations to stay in the local market. Further restrictions on international data flows would necessitate constructing overseas processing facilities, and hence fuel the local data processing industry's development.

This thesis is dedicated to my parents,

Joan and Richard Viggiano,

through them, everything was possible.

TABLE OF CONTENTS

CHAPTER I

THE RESEARCH PROPOSITION AND ITS ENVIRONMENT

Introductory background

Today, an international institution is needed to unravel the commercial and regulatory issues in a manner consistent with a liberal international economic order for information services. Through this thesis, an attempt is made to clarify the issues involved. The major issues relate to transborder data flows and dispute settlement of information services. The establishment of a liberal international economic system for information services is in every nation's interests.

This thesis examines Brazil's informatics trade policy and the existing conflict with its membership in the General Agreement on Tariffs and Trade (GATT) while attempting to analyze the difficulties associated with a developing nation and multinational corporations (MNCs) in a telecommunication context. This thesis concerns itself with the political ramifications more than the cost benefits of the situation. For lack of existing theory on this subject, it is hoped that an interdisciplinary approach, drawing on political science, economics and telecommunication policy resources will strengthen this effort.

Brazil is a particularly interesting country to discuss because of its relatively advanced telecommunication infrastructure and established international economic state (eighth largest economy in the free world, see appendix A for country profile). Leading the developing nations, Brazil also functions as a model for other third world nations. As cited in one report from the Office of the United States Trade Representative (1986): "Brazil is less dependent on imports than nearly any other nation in the world."[1]

Brazil's adaptation of an integrated informatics plan was designed to encourage the development of its 'infant' information and computer industries behind protective trade barriers. These trade policies also applied to transborder data flows (TBDFs): the transmission of data from computer to computer, using telecommunication circuits across national borders (for comprehensive definition, see appendix B).

At the present time, a common forum is needed to discuss trade in information service[2] issues and adjudicate the associated problems from such trading. The General Agreement on Tariffs and Trade in its present form is only concerned with trade in goods, but with some minor rule

---

[1]"_____," New York Times, 18 November, 1986 sec. D, p. 9.

[2]'Services' for the purpose of this thesis is defined as activities that produce an intangible and/or non storable output.

modifications, the General Agreement on Tariffs and Trade could make a satisfactory choice for resolving trade in information service questions. At the time this thesis was written, the General Agreement on Tariffs and Trade, in opposition to Brazil, was still discussing the merits of administering trade in information services.

Much of the debate behind transborder data flow is fueled by a world of technological haves and have nots.[3] The U.S., leading a small group of technologically advanced nations, calls for the broadest possible freedom in transborder data flow and the fewest possible restrictions. A much larger group of nations led by Brazil, without the same technological sophistication, seeks to protect privacy, defend national sovereignty, and to build their own informatics[4] infrastructure while favoring governmental regulation.[5] Peter Robinson states:

> Informatics services are integral to national economic development in industrialized countries, and are of increasing importance to national economies in developing countries. They are influencing international economic exchanges and relationships. They are a major growth in their own right and the effects of trade in telecommunication services will extend well beyond the telecommunication market itself. Informatics services will:

---

[3]Peter Robinson, "Telecommunications, Trade and TBDF," Telecommunications Policy 11 (December 1985): 310.

[4]"Informatics" is a term used to describe the emerging information industries of telecommunication and data processing.

[5]Robinson, op cit.

-improve productivity and competitiveness in virtually all areas of the economy;

-contribute to increased trade in goods;

-facilitate trade in other services;

-provide new opportunities for innovative services in other sectors of the economy;

-promote the internalization of many economic activities;

-increasingly affect the operations of multinational corporations; and

-influence the international division of labor.[6]

Brazil is taking the above criteria very seriously. Brazil believes their emerging 'informatics' sector has the potential to propel itself from a developing nation to a much more established world economy.

In 1977, Brazil sought to build up its computer industry and introduced new regulation, which referred to the need to initiate a policy for transborder data flow. The regulation required approval from a coordinating commission on data-processing activities in order to set up any such systems. Such approval could be granted for only a limited three-year period, and all users of such systems operating at the time were given 90 days to get the commission's approval. Since then, the number of restrictive regulations on TBDF in Brazil has increased, and are now the responsibility of the Special Secretariat for

---

[6]Ibid.

Informatics, (SEI, part of the country's national security council).[7] During this time, Brazil has very effectively limited or prohibited use of private transmission lines, forcing communications onto lower quality public networks.

The state run networks tend to be less secure, less efficient and more costly. This is compounded by Brazil requiring (See U.S. Trade Representative, 1981) data processing be performed only within the country as opposed to removing international connections with foreign computers.[8] These policies are based on an "infant industry" premise, in need of protection so it can grow at an adequate rate. As part of Brazil's informatics policies, international data links for teleprocessing services are subject to approval by local government.[9] The principal criteria used in evaluating requests for data links are preservation of the Brazilian labor market and protection of national firms and organizations.

These criteria limit opportunities for foreign vendors to provide information services to Brazil. Also, as Brazil's data processing and software capabilities increase, the Brazilian government will more frequently deny requests

---

[7]James Basche, "Information Protectionism," Across the Board 20 (September 1983): 40.

[8]A.W. Johnson, "Broadcasting and the Reflection of a Society," Queens University, (Canada, 1984), p. 115.

[9]Ibid.

for international data links. Furthermore, these actions increase costs to users inasmuch as Brazilian computing services are already expensive relative to those offered by U.S. vendors.[10] These policies essentially compel multinational corporations to use the country's own informatics industry or construct duplicate data processing operations within the host country.

In 1978, Brazil's then-military government[11] imposed a "reserve market share" policy in the informatics area, restricting the manufacture and sale of mini- and micro-computers to 106 Brazilian-owned firms.[12] The Special Informatics Secretariat, headed by Army and Navy engineers, was created in 1979 to administer the military's informatics policies.[13]

On October 29, 1984, Brazil passed a new Informatics Law[14] reserving the domestic market for mini- and micro-

---

[10]Ibid.

[11]"Brazil's Ban on Small-Computer Imports Aids Domestic Firms But Drives Prices Up," Wall Street Journal, 4 October 1982, p. 38.

[12]"New Law Affects Brazil's Big 'Informatics' Market," Business America, 10 December 1984, p. 44.

[13]"Brazil's Restrictions on Minicomputers are Here to Stay," Business Latin America, 18 January 1984, p. 22, col. 1.

[14]Unclassified U.S. Comm. Dept. Doc., 1984, subject: Translation of Brazilian Law No. 7.232, Oct. 29, 1984, Art. 13, par. I, (on file at the offices of Law & Policy in International Business.

computers to Brazilian-owned companies for eight years.[15] This law extended the market reserve share system which the government introduced in 1978 and made increasingly protectionist over the years.[16] The informatics law defines "informatics activities" as "those connected with the rational and automatic processing of information" and specifically includes, inter alia, the "research, import, export, manufacture, marketing and operation of machines, equipment and devices based on digital technique whose technical function is the collection, processing, building up, storing, switching, recovery and presentation of informatics."[17] The law arguably affects any firm which owns a piece of electronic equipment such as a calculator or electronic typewriter because of its inclusion of the words "operation of" and its broad definition of the machines which fall within the law's scope.[18]

This informatics law is viewed by the Americans as an attempt to alter the volume, composition, and direction of trade in goods and services. Further, the United States

---

[15]"Brazil, Tax: New Informatics Law," International Business Law (March 1985): 101.

[16]"Brazil's Ban on Small-Computer Imports Aids Domestic Firms But Drives Prices Up," Wall Street Journal, 4 October 1982, p. 38.

[17]Unclassified U.S. Comm. Dept. Doc., 1984, subject: Translation of Brazilian Law No. 7.232, Oct. 29, 1984, Art. 3, (on file at the offices of Law & Policy in International Business.

[18]"Tighter Restrictions on Informatics Loom in Brazil," Business Latin America, 15 August 1984, p. 257, col. 1.

feels that the law constrains its edge in technology by blunting import/exports and minimizing the exchange of information between parent companies and their overseas subsidiaries.[19] Brazilians see the economic considerations ie: the market reserve policy and import limitations as only a by-product of their main intention - protecting their infant informatics industry. This legislation can be classified as non-tariff barriers to trade (NTBS), falling under Walter's type II restrictions which deal with social and political considerations directly and affect economic issues only indirectly.[20] Non-tariff barriers are a regression from tariffs and do even more damage to world trade. Their effects are often unclear, and the international rules against non-tariff barriers are difficult to enforce, especially because of the diversity of non-tariff barriers.[21]

Under this environment, U.S. Companies have not fared well with Brazil's market reserve system, closing plants due to the "national company" rule, and have lost millions of dollars selling their subsidiaries at a fraction of their

---

[19]Ibid.

[20]Demetri Tsanacas, "The Transborder Data Flow in the New World Information Order: Privacy or Control," Review of Social Economy 43 (December 1985): 360.

[21]Marc Levinson, "Twelve Protectionist Traps." Across the Board 22 (September 1985): 24.

value.[22] The "national company" rule holds that if a foreign company starts a computer-manufacturing subsidiary in Brazil, it must either export all of its products or accept Brazilian control. "National firms"[23] are defined as "corporations established with their seat in Brazil," and which are under the "effective" control of "individuals residing and domiciled in Brazil or of domestic public entities."[24] Decisional, technological and 51% or more stock control constitute the "effective control" required by the statute;[25] thus, the firm must have autonomy from foreign sources of capital and technology and full voting control by resident Brazilians.[26] In effect, such a definition presently prohibits any type of joint venture arrangement between Brazilian firms and multinational companies.[27]

Multinational companies have taken varied approaches in dealing with the Brazilian informatics polices. While some

---

[22]"Brazil Curbs Computer Competition," New York Times, 8 October 1984, p. D1, col. 3.

[23]Unclassified U.S. Comm. Dept. Doc., 1984, subject: Translation of Brazilian Law No. 7.232, Oct. 29, 1984 (on file at the offices of Law & Policy in International Business.

[24]Ibid.

[25]Ibid.

[26]Ibid.

[27]Anne Piorkowski, "Brazilian Computer Import Restrictions: Technological Independence and Commercial Reality," Law & Policy in International Business 17 (1985): 619-26.

companies are just prepared to wait for the trade barriers to fall, some companies have brought suits alleging copyright infringement in an attempt to work within Brazil's new law.[28] Another viable strategy is to attack the Brazilian informatics market reserve policy as a violation of Subsidies Code with in the General Agreement on Tariffs and Trade.[29] Article VIII of the GATT Subsidies Code provides:

> signatories should attempt to avoid causing through the use of any subsidy, either injury to the domestic industry of another signatory, or nullification or impairment of the benefits accruing directly or indirectly to another signatory of the General Agreement on Tariffs and Trade.[30]

Albeit, developing countries have more latitude than industrialized countries in conferring benefits to their industries, the Brazilian market reserve system alone would probably not meet the required standard of injury to the entire U.S. informatics industry.[31] But on a case by case basis, a foreign company's loss of profit in the subsidizing country can be redressed.

---

[28]Ibid.

[29]Anne Piorkowski, "Brazilian Computer Import Restrictions: Technological Independence and Commercial Reality," Law & Policy in International Business 17 (1985): 639.

[30]Unclassified U.S. Comm. Dept. Doc., 1984, subject: Translation of Brazilian Law No. 7.232, Oct. 29, 1984, Arts. 8, par. 4(b) (on file at the offices of Law & Policy in International Business.

[31]Peter Robinson, "Telecommunications, Trade and TBDF," Telecommunications Policy 11 (December 1985): 312.

Developing countries cite three common reasons as to why they feel transnational telecommunication must be regulated. Governments restrict international data streams for reasons of 1. public interest. Many countries demand that information vital to the functioning of their economies should be stored and processed within their borders. If such data is stored domestically, governments know that access to it will not be cut off for legal, technical or political reasons.[32] (see appendix E for Swedish example)

Another reason why governments may act to curb TBDFs is to ensure the 2. cultural and societal integrity. Concern that foreign cultural information could overwhelm their societies and cultures has provoked developing and developed countries to limit or consider limiting information flows.[33] Canada for example has tax provisions to discourage imports of news magazines produced abroad and to discourage broadcasters in the northern tier of the United States from aiming their signals at Canadian audiences. A large number of countries restrict the imports of films.[34] Ironically, this is the only service industry explicitly mentioned in

---

[32]Ibid., p. 83.

[33]Ibid., p. 79.

[34]'Services' for the purpose of this thesis is defined as activities that produce an intangible and/or non storable output.

the General Agreement on Tariffs and Trade.[35]

Cultural concerns are understandable, but critics believe that many proposals that claim to protect societal and cultural interests are often used to protect domestic commercial and industrial interests while cementing the political position of national leaders.[36]

Third and last, countries will always restrict information flows to safeguard their 3. national security and economic sovereignty. It is natural for most governments to try to prevent the disclosure of national security information. The roots of this concern are found in the way information is handled internationally; it is gathered from many locations but processed and stored in few. The third world believes that they could become an exporter of raw data and a consumer of processed data. This is compounded by the fact that processing and storage of information outside the country could undermine informationalization efforts, especially if the processed data is returned at a lower cost than local processing would allow. As with current international trade, this situation as outlined above, would do further harm to the balance-of-payments problems that face poorer countries and increase their external debt.

---

[35]Andre Sapir, "North-South Issues in Trade in Service," World Economy 8 (March 1985): 29.

[36]Ibid.

At the same time, the export of U.S. information services represents approximately 25% of the total U.S. exports. Therefore, any action by nations to curtail this free flow of information is of great interest to multinational corporations.[37] Threats to this free flow do indeed exist, besides retarding technical growth in the data processing industry, the danger of losing legitimate access to vital information increases. Any restrictions on flow would most likely force multinationals to set up full scale processing facilities in the host country and aid the advancement of its local data processing industry.

Although the United States as a whole has a lot at stake in the debate over transborder data flows, as a developer of both satellites and computers, it still leads the world in the manufacture of informatics hardware.[38] It becomes obvious why governments of developing countries have chosen to regulate the flow of information crossing their borders. The new post-industrial era - the information age - is the result of the increasing importance of data and its

---

[37]Joseph L. Sardinas, Jr., Susan Merrill Sawyer, "Transborder Data Flow Regulation and Multinational Corporations," Telecommunications (November 1983): 59.

[38]D. Shiller, Telematics and Government (Norwood, N.J.: Ablex, 1982); National Telecommunication and Information Administration, 98th Congress, 1st sess., United States Long Range Goals in International Telecommunication and Information: An Outline for United States Policy xi, xii, (Comm. Print 1983) p. 156, "estimates for the telecommunication equipment market in 1987 indicate a U.S. market of about $34 billion and a world market of just over $60 billion."

speed in crossing national borders. The focus of economic activity has shifted in favor of the tertiary sector and the increased employment opportunities in administration, management, clerical work and research.[39]

The United States has been a most important contributor to the information age mainly because of the competitive edge it has held in the informatics industry. This edge is traceable to a wide range of sources: the prevalence of entrepreneurial risk taking, the size and affluence of the domestic market, the sheer size of the leading U.S. corporations, and an awareness of the potential returns from research and development.[40] Also, the export of sophisticated equipment and the data processing/storing capacity in U.S. computer systems has brought attention to the benefits gained by the United States from the handling of information.[41]

> Having realized that information, besides being a powerful weapon, is also a marketable, transferable, exportable commodity, developing countries have begun to pass legislation regulating the international flow of data. The handling of information by the domestic data processing industry will provide revenues and employment and will diminish the dependence on the United States. The importance of information is well summarized by the French Magistrate of Justice, Louis Joinet:

---

[39]Demetri Tsanacas, "The Transborder Data Flow in the New World Information Order: Privacy or Control," Review of Social Economy 43 (December 1985): 358.

[40]Ibid.

[41]Ibid.

> Information is power, and economic information is economic power. Information has an economic value and the ability to store and process certain types of data may well give one country political and technological advantage over other countries. This in turn may lead to loss of national sovereignty through supranational data flows.[42]

Transborder data flow was brought into the limelight of international issues by the concern over data privacy protection. In the early 1970s, Sweden, the Federal Republic of West Germany, France, Denmark, Norway, Austria and Luxembourg adopted data protection laws to safeguard the privacy of their citizens; and, in the four latter cases, to protect the privacy of corporations and associations as well.[43] (see appendix C for OECD privacy guidelines)

By creating common ground for addressing information service trading obstacles, Brazil and the third world majority worry that their national development goals will not be achievable. Liberalizing privacy protection and information service trading, would be virtually guaranteed if the GATT was to supervise trade in information services. GATT's latent potential is strong, but as the research

---

[42]Ibid. p. 359.

[43]Guidelines on the Protection of Privacy and Transborder Flows of Personal Data (Paris: CD Secretariat, 1981); and Convention for the Protection of Individuals with Regard to Automatic Processing of Personal Data, European Treaty Series No. 198 (Strasbourg: Council of Europe, 1981).

proposition states below, its present framework requires rule modification and endorsement for it to accommodate this new trade sector.

Research Proposition

The general proposition addressed by this thesis supports: "The General Agreement on Tariffs and Trade, during its 1989 Uruguay Round appears to be much closer to becoming the multilateral forum needed for resolution of trade in information service disputes; specifically, disputes pertaining to transborder data flow between Brazil and the U.S. multinational company."

To elaborate further, the General Agreement on Tariffs and Trade's past inability to resolve problems with transborder data flow and other trade in services issues basically have originated from two sources. The first problem concerns the narrow scope of GATT's jurisdiction which currently excludes trade in information services dispute resolution. To a lesser extent, the second obstacle arises from political opposition. Developing signatory countries do not want the General Agreement on Tariffs and Trade to act as a common forum for trade in information services dispute settlement.

The General Agreement on Tariffs and Trade was originally conceived almost 50 years ago as an organization in which member countries could negotiate and resolve trade disputes. In the 1940s, trade in services did not comprise

much of the world's trade and consequently, trade in information services jurisdiction was excluded by GATT's designers. This lack of foresight only recently has made apparent the inherent differences between trade in goods and trade in services. For example, a good can only exist in one physical location at any given time. With a service (especially data and information services), it is quite possible for it to be implemented in multiple locations simultaneously. The problem becomes a little more obvious; when a service exists simultaneously in multiple locations, which legal system has jurisdiction ?

Political opposition from the developing signatory nations also faces the General Agreement on Tariffs and Trade. The third world strongly asserts that if the GATT was to include trade in service authority, the industrialized world would increase the informatic disparity between the first and third worlds. The construction of a common forum for trade in service negotiation and liberalization could make the situation more difficult for developing nations. Controlled economic trading environments are essential for developing nations newly engaged in world trading, desiring to expand their informatics export market.

When data processing services are consistently purchased from outside a country, the development of a domestic information service industry is stymied. This

situation can result in a loss of job opportunities to nationals, exacerbate an existing unemployment problem and result in a loss of tax revenue. Enacting transborder data flow laws to ensure information processing will not be done off-shore, helps guarantee jobs and development of the local informatics industry.[44]

The organization of this thesis begins by outlining the General Agreement on Tariffs and Trade as an adequate forum for resolving potential trade in services conflicts. Preceding on this supposition, chapter two discusses Brazilian and American national objectives and concerns against the associated impacts with restricting transborder data flow. Chapter three considers how TBDF has been integrated with Brazilian national development objectives and the agendas of U.S. multinational corporations. The thesis concludes with a projection of how well the General Agreement on Tariffs and Trade could resolve trade in information service conflicts between Brazilian and U.S. agendas.

---

[44]R. Chandran; A. Phatak; R. Sambharya, "Transborder Data Flows: Implications for Multinational Corporations." Business Horizons 30 (November/December 1987): 74.

CHAPTER II

DEFINITION OF ISSUES

GATT as the Proper Forum

In its early years and perhaps as late as the 1960s, the General Agreement on Tariffs and Trade was considered a remarkably successful international organization - perhaps because it had something concrete to negotiate about, namely tariffs. But by the end of the 1960s, the organization's decline had begun. GATT rules tended to be observed only in easy situations, and countries became increasingly unwilling to have their actions subject to the tests and conditions of the agreement.[45]

The General Agreement on Tariffs and Trade started as the rule book with which member countries negotiate multilateral trade arrangements. This 44 year-old rule book governs roughly 80% of the world's trade - cars, computers, widgets, steel, software, just about everything but services, textiles and apparel - are covered by the

---

[45]John Hein, "What Will the GATT Beget?" Across the Board 22 (September 1985): 29.

multifiber arrangement.[46]

The GATT is the only sensible starting point for any discussion on the reform of the international trading system. The most serious threat to the system has been the erosion of the principle of non-discrimination, requiring its members to accord each other equal treatment. Another area of GATT's deterioration has been the abandonment of the norms of the market economy in the domestic policies of the major trading countries.[47]

The purpose of the General Agreement on Tariffs and Trade system is to maximize gains from trade by reducing or eliminating the uncertainty that national policies impose on international trade. The General Agreement on Tariffs and Trade's purpose would be frustrated if subsidization were to become a legitimate practice; in particular, governments would find it increasingly difficult to refuse demands for new subsidies. With subsidization unrestrained, few of the other trade policy commitments that governments make toward each other would be of any value.[48]

At present, the GATT's objectives can be defined as

---

[46]Ben Carey, "Re-Writing the Rules of Trade," American Shipper 28 (October 1986): 42.

[47]Amnuay Viravan, "Let's Rewrite the Rules." Far Eastern Economic Review 143 (March 9, 1989): 80.

[48]T. Neale, "GATT Offers Hope Against Protectionism," Journal of Commerce and Commercial 364 (5 June 1985): 3.

follows:

> -trade liberalization through the substantial reduction of customs tariffs and the general elimination of quantitative restrictions, as well as the regulation of certain non-tariff barriers;
>
> -non-discrimination in trade through the application of the most favored nation (MFN) clause, with derogations and flexibility necessary to accommodate regional economic integration and special and more favorable treatment for developing countries;
>
> -establishment and consolidation of a firm base for the development of world trade, so as to ensure the maximum certainty and transparency in the conditions in which trade is conducted; and
>
> -consultation and dispute settlement, so as to avoid damage to the trade interests of member countries and to resolve problems that arise between them.[49]

The three basic functions of the General Agreement on Tariffs and Trade include:

1. a legal framework for the conduct of trade relations.
2. the only forum for multilateral trade negotiation and for the adaptation of the legal framework of the multilateral trade system.
3. an organ for dispute settlement.[50]

The General Agreement on Tariffs and Trade's dispute settlement function is probably the most important one of

---

[49]Bettina Hurni, "How To Use GATT Effectively," EFTA Bulletin 28 (January-March 1987): 17.

[50]Ibid.

the group. The dispute settlement process endeavors to:

> -use the rules and procedures in order to determine the common interest;
>
> -seek conciliation between the parties in dispute rather than to resort to sanctions;
>
> -call upon panels of independent experts to establish the facts of a case and evaluate their compatibility with the General Agreement;
>
> -make recommendations to the contracting parties concerned, or give a ruling, as appropriate; and
>
> -relay on surveillance by the Contracting Parties to promote the implementation of panels' recommendations as adopted by the Council.[51]

The aim of the dispute settlement process is not to establish who is right or wrong, but to propose solutions which make any violation just temporary and terminate it as quickly as possible.

The General Agreement on Tariffs and Trade has had many successes since its inception 44 years ago, but the world trading system it fostered is increasingly under protectionist pressure. For this reason, trade ministers of GATT member countries launched a new round of multilateral trade negotiations in Punta del Este, Uruguay, in September 1986. The objectives of the Uruguay Round, to be accomplished in 4 years, have included further liberalizing trade, strengthening the role of the GATT, and fostering cooperative action to strengthen the relationship between

---

[51]Ibid.

trade and other economic policies.[52]

In the Uruguay Round, a major area of contention was trade in services. The main elements of the program for negotiations on services are definition, measurement and coverage of the multilateral framework for trade in services. A conceptual framework has been devised to create an international regime of discipline for trade in services. Coverage depends in part on the definition, but the proposed agenda is characterized by an asymmetry, unacceptable to developing nations. Sector-specific multilateral agreements depart from the traditional GATT approach.[53]

On April 8, 1989, negotiators from more than 100 countries ended the first phase of the negotiations by ratifying 15 "framework texts." These texts provide guidance for the remaining 2 years of the Uruguay Round Multilateral Trade Negotiations. The Uruguay Round is the most comprehensive and complex of all the GATT rounds. The aim of the April meeting was to secure agreement on long-term reform, and this objective was achieved. The framework agreement commits members of GATT to substantial progressive reductions of agricultural protection and support that distorts trade, beginning in 1991. The

---

[52]Naheed Kirmani, "The Uruguay Round: Revitalizing the Global Trading System." Finance & Development 26 (March 1989): 6.

[53]Deepak Nayyar, "Some Reflections on the Uruguay Round and Trade in Services." Journal of World Trade 22 (October 1988): 35.

countries agreed to a short-term freeze of domestic support and protection not to exceed current 1989 levels. The Uruguay Round is scheduled to end in December 1990.[54]

Most of the trade restrictions implemented in the past fifteen to twenty years have been quantitative restraints imposed, more or less, voluntarily on exporters.[55] In trade in goods, the three major negotiating objectives have been 'national treatment,' 'most favored nation' provisions and 'transparency' of requirements.[56] When speaking about informatics services, there are some basic differences between trade in goods and services especially in terms of 'national treatment' objectives. One of the most apparent differences is the difficulty in dealing with the rapid pace of technological change in telecommunication services, compared to the maturity in dealing with goods. The obligation of 'national treatment' presented in Article III of the General Agreement on Tariffs and Trade requires that, once a product has been exported, it:

> shall be accorded treatment no less favorable than that accorded to like products of national origin in respect of all laws, regulations and requirements affecting their internal sale, offering for sale, purchase transportation,

---

[54]Marjory E. Searing, "The Uruguay Round - Up and Running." Business America 110 (May 8, 1989): 11-12.

[55]Frank Stone "Canada, the GATT, and the International Trade System" The Institute for Research on Public Policy, Montreal, 1984, p. 31.

[56]Ibid., p. 32.

distribution or use.[57]

In a transborder data flow situation, where computing or information services are offered over telecommunication facilities from a foreign location, it is not entirely clear how the above might be interpreted. The first requirement with a good is that it has to cross a border, that is, the good must physically exist in the 'user' nation. With a database, it may continue to reside in the 'producer' country, with only 'copies' of certain parts transmitted. In addition, the technical irrelevance of the border makes it difficult to define exactly when a data-related service crosses the border. Once goods have been transferred, it is clear that they exist in the recipient country. Therefore, if they are treated in exactly the same way as domestic goods (the 'national treatment' concept) free from discrimination.[58] However, with trade in data services, the data could remain stored in the country of origin, and access to that data could the be subject to laws and regulations of the originating country, not the laws and regulations of the user country.

At the present time, the General Agreement on Tariffs and Trade only covers trade in goods such as computers and switching gear, the General Agreement on Tariffs and Trade

---

[57]Ibid.

[58]Ibid., p. 33.

has yet to be applied to data processing services or the provision of telecommunication circuits.[59] With some minor modifications, however, services could be handled under the General Agreement on Tariffs and Trade's Standards Code. The Standards Code could even serve as a model for a code designed to discourage the use of governmental regulations for protectionist purposes.[60]

Protectionism in the area of services implies, due to its peculiar nature, that they are restrictions on foreign investment and barriers to trade.[61] The limitations on foreign corporate ownership and establishment add many complexities to the prospect for negotiations on information service transactions. Many countries feel reluctant to open the Pandora's box of rules governing foreign investments.[62] The solution is to probably leave aside, for the time being, the foreign corporate investment issue and start negotiating on trade in services matters alone.[63]

---

[59]Joan E. Spero, "Barriers to International Information Flows," Telecommunication 17 (November 1983): 69.

[60]Geza Feketekuty, Jonathan D. Aronson, "Meeting the Challenges of the World Information Economy," World Economy 7 (March 1984): 83.

[61]Frank Stone "Canada, the GATT, and the International Trade System" The Institute for Research on Public Policy, Montreal, 1984.

[62]Andre Sapir, "North-South Issues in Trade in Service," World Economy 8 (March 1985): 36.

[63]Ibid.

As taken from Henry Kissinger, "U.S. Must Take Lead in Revamping World Trade Policy," International Herald Tribune, 29 October, 1984:

> Despite the best efforts of statesmen, the attempt (at multilateral liberalization of trade and investment) may fail. In that case, the United States cannot afford to be the only country practicing free trade in an increasingly mercantilistic world. If the United States is driven to it, the United States can, however reluctantly, do well at the game of unilateral trade practices and bilateral agreements.
>
> In a world of trading blocs, the United States should be able to construct a trading bloc composed of the major Latin American nations, Canada, and probably Australia and New Zealand ... At some point, the sheer weight of the United States, in cooperation with like-minded countries... will probably convince the rest of the world -- to put it mildly -- of the need for more coordinated trade and economic policies. The United States would then have achieved a more coherent trading system by the back door.

Intense pressure is building from many different governments for the trade organization to include trade in services (including transborder data flow and information services) in its trade deliberations.[64] The way the General Agreement on Tariffs and Trade handles trade in information services may have a greater impact on the information industry than all the political and technical pronouncements of the other international organizations working with information issues (including the United Nations and the

---

[64]Steve Moore, "Information Managers Must Face the International Communications Web," Data Management 70 (June 1984): 31.

International Telecommunications Union) combined.[65] Peter Robinson states:

> While a major emphasis in international TBDF debates will increasingly focus on trade in TC services and on policies for use of international telecommunication facilities, there is a range of legal questions that will continue to demand parallel attention. For example, a factor which makes it difficult to accept the contention that trade in data and data services is conceptually no different from trade in tangible goods, is that the user of the service across international boundaries is operating virtually simultaneously under two or more different legal regimes, whereas the user of a tangible product is operating under the legal regime of the country in which the product exists. The user of international data services is therefore at risk of being in breach of the law in one or the other country, if the laws or legal concepts are not sufficiently compatible.
>
> If trade in telecommunication and computing services is to prosper, there needs to be an awareness of the relevant differences in legal approaches and the desirability of evolving greater compatibility. For example, insular national approaches to the question of 'data ownership' will probably affect trade relations. Until recently, United States law had not accepted such a concept, but over the past few years some state governments within the United States have passed laws conferring a quality of 'property' on data and information.[66] (see appendix D for states)

Many reports on trade in services lack a reliable statistical base from which more meaningful assessments can be made.[67] Most estimates use available data and are subject to interpretation. For example, estimates given by

---

[65]Ibid.

[66]Peter Robinson, "Telecommunications, Trade and TBDF," Telecommunications Policy 11 (December 1985): 317.

[67]Ibid., p. 311.

the United States Government in its National Study on Trade in Services, prepared for the General Agreement on Tariffs and Trade in 1983, hold that world trade in services exceeds $350 billion, and several countries (USA, UK, France and West Germany) have exports in the $30-35 billion range.[68] Some experts have suggested that the amount by which the world trade in services exceeds $350 billion is considerable, and the actual figure is probably closer to $700 billion.[69] Estimates of trade in telecommunication and computer services are virtually non existent, but estimates of the world market (ie: total sales) have been given as approximately $300 billion in 1984 rising to $560 billion in 1990.[70]

The importance of services in economic growth is further evidenced by the estimate that of the 20 million new jobs created in the USA during the past decade, 90% were in services (largely in 'information services and in jobs in areas with an increasingly technological orientation').[71] The shift from jobs related to the physical production of

---

[68]U.S. National Study on Trade in Services, A Submission to the GATT. Office of the U.S. Trade Representative, (December 1983): 13.

[69]Peter Robinson, "Telecommunications, Trade and TBDF," Telecommunications Policy 11 (December 1985): 311.

[70]W.J. Sullivan, "Outlook for telecommunications: Impacts on Labor, Trade and Economic Development," US Department of Commerce (February 1985), first table.

[71]Robinson, op cit., p. 311.

goods to jobs involving the creation, processing and distribution of data has been dramatic. The proportion of the American work force involved with information-related jobs is now more than 60% compared with only 17% in 1950.[72] Information-based jobs in the world economy as a whole increased sixfold, from 10 to 60 million during the past decade.[73] Information is also more involved in support of the production of goods now than in the past. Of the 19 million new jobs created in the United States during the 1970s, close to 90% were 'white-collar' rather than 'blue-collar' jobs.

The original stimulus on trade in services was provided almost solely by the United States, only recently has the international community at large have become equally attentive to questions regarding the role of services in international transactions. Two of the main factors responsible for increasing the attention given to international activities in the services sector of the world economy are:

1 The recent technological development producing the cornucopia of new services in the fields of data processing and telecommunications.

2 The potential for services to play a greater role in world transactions and the problems associated with the lack of an internationally-

---

[72]John Naisbett, Megatrends (New York: Warner Books, 1982), p. 4.

[73]Ibid.

agreed body of law covering these services.[74]

During the November 1982 General Agreement on Tariffs and Trade ministerial meeting, signatory countries heard proposals from the United States and other industrialized countries for the creation of a working party on services. The proposals were not accepted, but the signatory countries with an 'interest in services of different types' were recommended to undertake national studies on trade problems in the sector. The results then to be disseminated within the General Agreement on Tariffs and Trade and a determination as to whether any multilateral action on these matters would be appropriate and desirable.[75]

The developing countries led by Brazil and India have openly opposed establishing a multilateral framework for negotiating on services. The third world feels that if trade in information services became within the realm of the General Agreement on Tariffs and Trade, the GATT's free trade philosophy would make attaining their national development goals more difficult. Initially, developing nations need a more controlled economic trade environment in which to foster trade relations with the multinational

---

[74]Andre Sapir, "North-South Issues in Trade in Service," World Economy 8 (March 1985): 27.

[75]Andre Sapir and Ernst Lutz, "Trade in Services: Economic Determinants and Development Related Issues," World Bank Staff Working Paper No. 410 (Washington: World Bank, 1981).

corporations.

The general fear is that under free trade, transnational companies would come to dominate their technical development and financial markets much as they already dominate manufacturing. Most developing countries see little to be gained from a U.S. promise to open its markets to their services, since they generally have only small service sectors of their own. Further, if Multinationals are able to offer their products in a host country via telecommunication links, (without establishing subsidiaries that would help develop skills and increase productivity locally), developing countries would only serve as outlets for the multinational information service provider.

Nevertheless, an agreement was reached at the 1984 General Agreement on Tariffs and Trade session and a working party was organized by the Chairman of the Contracting Committee with the GATT Secretariat's support.[76] The working party's main function was compiling and distributing information on service industries.

Bela Balassa states, "liberalization of information service trading is desirable both to increase the relative attractiveness of exports for domestic producers and to ensure competition for the promotion of technological

---

[76]Andre Sapir, "North-South Issues in Trade in Service," World Economy 8 (March 1985): 28.

change."[77] Lowering trade barriers and reducing uncertainty as to the future imposition of such barriers on a reciprocal basis is in the mutual interest of the developed and newly industrializing countries. The newly industrializing countries should assume increased obligations in the Uruguay Round negotiations. Developing countries should not await the conclusion of the multilateral trade negotiations to liberalize their imports because this would contribute to their growth economically.[78]

As Yet, no consensus exists among the major U.S. players on trade in information services - the banking and insurance industries, multinational corporations, and the data processing and manufacturing industries -- as to whether GATT could act as the proper forum through which to organize an internationally endorsed framework for such trade.[79]

This section basically outlined the GATT, illustrating the organization's purpose at its inception to its present posture at the Uruguay Round of negotiation. If transborder data flow is to be dealt with on a trade in service basis, the General Agreement on Tariffs and Trade is closer to

---

[77]Bela Balassa, "Interest of Developing Countries in the Uruguay Round." World Economy 11 (March 1988): 39.

[78]Ibid.

[79]Dennis Holden, "International data flows," United States Banker 96 (November 1985): 60.

becoming the multilateral forum needed to handle the inevitable trade problems. The next section examines the reasoning behind transborder data flow restrictions and the ways in which Brazil and other host governments have accomplished reducing transborder communication.

Restriction of Data Flows

Information technology has become central to international business, it has come to be viewed by developed and developing countries as the crucial resource for modernization, economic growth, and job creation. Communication and information industries have emerged as strategic sectors in many countries, and they frequently have become the subject of nationalism and protectionism. Countries seeking to promote domestic processing and technologically advanced communication infrastructures have introduced policies which discourage the flow of data across their borders.[80]

How does a government impede information flows? It eliminates choice in the communication marketplace. It introduces requirements or takes actions that impair the ability of international businesses to compete. Frequently, telecommunication authorities are the instruments of these policies.[81]

More often than not, restrictions, or threatened restrictions, resemble classic barriers to trade.[82] They

---

[80]Joan E. Spero, "Barriers to International Information Flows," Telecommunication 17 (November 1983): 68.

[81]Ibid.

[82]Ibid.

include:

- discriminatory pricing of data transmission services;
- mandated use of national public data networks, eliminating the ability to meet specialized needs with a technically appropriate and cost efficient communication links;
- denial of leased lines, or restrictions on their use that take away the user's ability to offer competitive services;
- local content laws requiring the processing of data within the country of origin as a part of the user's transmission requirements;
- restrictions on the import of equipment, spare parts, or software; and
- emerging policies which can provide the basis for customs duties and value-added taxes on classes of information as that information enters or leaves a country via modern communications links.

If the flow of information within the multinational corporation is restrained, the cost of operating abroad will most definitely increase since central planning and economizing on scarce resources, both human and material, will be affected.[83]

Cheap, effective, and efficient data transmission are essential in information services such as airline reservations, international credit cards, international money transfers, and international banking. The increased complexity of international relations is counteracted by the existence of sophisticated information networks which

---

[83]Ibid.

facilitate a higher volume of international transactions.[84]

Many in the business community have come to the conclusion that barriers to the flow of information are increasingly driven by protectionist pressures and, therefore, should be addressed as trade issues. Remedies for trade discrimination will require two approaches. As taken from Joan E. Spero, "Barriers to International Information Flows," Telecommunication, (November 1983):

> First, U.S. legislation is needed to obtain the greater inclusion of services in domestic policy, including trade policy. In the absence of international trade laws, the USA Trade Act of 1974 must be strengthened to facilitate bilateral and multilateral agreements in the service sector, including telecommunication and information.
>
> Second, for the long-term, international agreements under the GATT must be extended to cover services and the special needs of telecommunication and information. In this area, there is an opportunity for service providers, which are so dependent on international information flows, as well as telecommunication and information specialists to work together and with the USA trade representative in adapting existing trade principles to discriminatory actions in the communications field. By applying a trade approach that has served to liberalize the flow of goods, business can hope to achieve liberalization -- and some rules of the road -- for the international flow of information.

In one way or another, everything centers on the issue of where the right of private companies to compete should end and where the responsibility of communication monopolies to provide a wide variety of communication and information

---

[84]Ibid.

services to promote their public welfare should begin. If, for instance, the Postal, Telephone and Telegraphs (PTTs) adopt usage-sensitive pricing of leased lines instead of fixed-rate pricing, this has the side-effect of protecting and promoting domestic suppliers of information services because it substantially raises the cost of doing business for foreign firms.[85]

The multinational corporations are feeling the financial pinch in connection with the transmission of data across national boundaries. The Postal, Telephone, and Telegraph monopolies abroad provide a formidable obstacle to cost-effective data transfer throughout South America, Europe and Japan. PTTs control all telephone lines at the host station and have begun to regulate the multinational corporations to the point of strangulation.[86]

One method of transborder data flow regulation has been to prohibit or restrict the use of private leased lines (such as SWIFT) by denying multinational corporations the right to attach enhancing equipment, such as concentrators or nodes, to lines linked to other countries. Another threat is the proposed use of volume-sensitive pricing,

---

[85]Geza Feketekuty, Jonathan D. Aronson, "Meeting the Challenges of the World Information Economy," World Economy 7 (March 1984): 69.

[86]Joseph L. Sardinas, Jr., Susan Merrill Sawyer, "Transborder Data Flow Regulation and Multinational Corporations," Telecommunications (November 1983): 60.

rather than the fixed fees charged to high-volume users of private international lines. This is an attempt by foreign nations to discourage the use of private lines which are in direct competition with the Postal, Telephone and Telegraph monopolies. In addition, it is seen as forced encouragement for the multinational corporations to develop communication networks abroad. It also would present problems for multinational corporations who rely heavily on electronic-mail transfers for maintaining company statistics on sales, profits and losses, etc., at corporate headquarters which are updated daily.[87]

These new trade barriers fail to be consistent with national policies. Their effects can be analyzed from two points of view: trade effects and domestic effects. The trade effects will be manifested in a lower volume of international trade in goods and services as the flow of information between coordinated data systems diminishes, the feedback sequences of this flow stops, and the degree of uncertainty concerning potential importers and exporters increases. Services sectors such as tourism, airlines, financial services, and banking will be especially affected. Self-sufficiency might be forced upon many nations if the privacy issue is forced to the extreme. The domestic effects will be associated with lower incomes in the export

---

[87]Ibid.

and service sectors: higher production costs as cost reducing technology of foreign origin is denied to domestic producers; higher prices in the data processing industry (at least at the initial stages) since the domestic firms will be inefficient; and higher costs for research and development. The potential losses could outstrip the benefits, especially if the domestic firms lack the (necessary) knowledge and equipment to handle and process the data.[88]

Already, the prospect of vast quantities of information crossing international borders has led to proposals in France and Brazil for the establishment of international "gateways" through which all information entering or leaving the country would pass. At each gateway, information would be quantified, classified according to its purpose, value and destination -- and then, like any other commodity, taxed or restricted accordingly.[89]

The creation of gateways would encourage taxation of information; it would also degrade both the speed and security of all communications. Technology might solve the speed problem, but security problems would multiply.

---

[88]Demetri Tsanacas, "The Transborder Data Flow in the New World Information Order: Privacy or Control," Review of Social Economy 43 (December 1985): 361.

[89]Steve Moore, "Information Managers Must Face the International Communications Web," Data Management 70 (June 1984): 31.

Government law enforcement agencies that regularly open private mail would not hesitate to monitor private communications at gateways. Encryption and decryption technologies would escalate, and the combination of security and tax expenses would drive communications costs up exponentially.[90]

A tax on information is not as farfetched as it sounds. Trade in information services has become a major determinant of global trade balances, and the enormous government revenues from taxation of information flows would easily offset the cost of the enforcement bureaucracy required.[91]

Taxation of TBDF will go through three stages. In the first, the multinational company probably has an advantage, because tax authorities are not focusing on the important aspects of the issue. In the second, the multinational corporation will probably be the victim of the inefficient handling of the taxation of these activities, and in the third, a middle ground will be reached, with more sophisticated concepts of measurement and presence. Further research is required into the amount of activity taking place on a worldwide scale. TBDF will be a substantial revenue generator for the more sophisticated tax

---

[90]Ibid.

[91]Ibid.

jurisdictions.[92]

There is little question that the transborder data flow will attract the attention of tax authorities, requiring systematic invoicing rules for tax purposes since its growth is expected to continue at the present rate.[93] Several countries, including France and Brazil, are currently considering taxing the flow of data and information, as it crosses their borders. Other nations are placing restrictions on the types of communications hardware and software that can be imported, and are requiring that domestic Postal, Telephone and Telegraph lines be used in data transmission.

Brazil has an array of restrictions dealing with leased lines, access to data bases abroad, local data processing, and the importation of equipment and software. Companies may not use private leased lines to access data bases outside Brazil but must use the public network instead.[94]

---

[92]Walter F. O'Connor, "The International Tax Implications of Transborder Data Flow." International Tax Journal 15 (Winter 1989): 73-85.

[93]Ibid.

[94]Joan E. Spero, "Barriers to International Information Flows," Telecommunication 17 (November 1983): 68.

In West Germany, the Deutsche Bundespost, despite disclaimers to the contrary, had moved to force users of private leased lines to use the national public data network. In 1982, the telecommunications authority announced it would permit use of an international leased line only if some data processing were performed in Germany before leaving the country. By the spring of 1983, the Bundespost surprised international users by announcing further plans to charge usage-sensitive rates, in addition to fixed charges, on some international leased lines, even if data

In addition, they may not transmit data abroad for processing unless domestic alternatives are unavailable. Brazil sees these restrictions as essential to the development of its communications infrastructure and the protection of its infant information industry.[95] "The motivation for restrictive TBDF regulation is not uniquely anti-American, according to one multinational banking executive. "Rather, these nations are determined not to let American firms dominate their infant computer and telecommunication industries, and they also fear the new information age will shrink national tax bases."[96]

Whatever the motivation, the outcome could be serious. One provider of international data processing services estimates that the widespread introduction of usage-sensitive rates would raise its costs by 700%. It would have a similar effect on other major international data users and suppliers. The cost to the United States would have an adverse impact on the balance of payments, on trade, and on the jobs that the rapidly growing information-based industries provide.

An alternative to governmental restriction concerns the

---

processing conditions were met. Among the justifications for this unpredictable and restrictive environments are the protection of revenues of the telecommunications authority.

[95]Ibid.

[96]Dennis Holden, "International data flows," United States Banker 96 (November 1985): 60.

right of private entities to set up their own communication systems. With modern satellite technology, many large companies that are heavy users of communications find it cheaper and more effective to set up their own communication networks and bypass existing ones. By leasing satellite circuits and setting up their own ground stations, private firms such as Mobil and Citibank can in effect operate communication systems to their own specifications.[97]

For example, many international banking services rely heavily on computers and communications; in manufacturing, TC services provide opportunities for major savings (in inventory, for example); and growing use is being made of computer-aided design across international borders. In addition, a number of service firms have internationalized their operations in order to meet changing needs of clients who have extended into foreign markets. These extensions and developments would be virtually impossible without an increasing use of transborder data flows.[98] Banks and other financial-service institutions need continuously flowing information about financial transactions and currency fluctuations around the world. Any restrictions on that access can slow or impede necessary immediate decisions and

---

[97]"Citicorp's Satellite Challenge," New York Times, 24 March, 1983, p. D1.

[98]Peter Robinson, "Telecommunications, Trade and TBDF," Telecommunications Policy 11 (December 1985): 313.

even long-range planning, important to the operations of a multinational company.[99]

From the point of view of the existing communication monopolies, this represents a further threat to their revenue base and monopoly control. They fear that firms with their own internal communication systems could resell unused time on the system, further undermining their monopoly position.

A specific example is the 1985 Federal Communications Commission (FCC) decision to allow shared use and resale of international telecommunication circuits (see appendix F for complete summary). It was hoped that this action would pave the way for entry of competitive new communications services in Europe. This time the "policy export" strategy backfired. European Postal, Telephone and Telegraph authorities knew the intent was to introduce competition into their tightly controlled markets, and they angrily threatened to move from flat rates to usage-sensitive rates, or even to eliminate privately leased lines entirely.[100] The United States quickly backed off at the urging of domestic telecommunication users, to whom the European threats could mean a 100 to 500% increase in the cost of doing business in

---

[99]Ibid.

[100]Steve Moore, "Information Managers Must Face the International Communications Web," Data Management 70 (June 1984): 32.

Europe.[101]

Restrictions impose a burden of higher costs and less efficiency, and they make it difficult for companies to bring new and innovative services to foreign markets. They threaten the ability of companies to invest and compete in markets of high potential growth. They also put a brake on the economic benefits of investment and trade, both at home and in the countries where new businesses and services could otherwise be introduced.[102]

Also, companies faced with the arbitrary or discriminatory actions of governments have few, if any, remedies. For one thing, the principle of free flow of information is simply that -- a principle without teeth in U.S. domestic or international law.[103]

All firms that do business broad, or certainly almost all, must make heavy use of data sent across national borders, credit information, production, financial and marketing data, personnel data, including job classifications, salary and benefit structures, and other labor information concerning unions and work councils.[104]

---

[101]Ibid.

[102]Joan E. Spero, "Barriers to International Information Flows," Telecommunication 17 (November 1983): 68.

[103]Ibid.

[104]James Basche, "Information Protectionism," Across the Board 20 (September 1983): 341.

The purpose of this section was to examine Brazil's transborder data flow isolation and lead into the associated trade and economic ramifications for multinational corporations. A multinational corporation's daily operation depends heavily upon transnational communication. Any attempt by the MNC to bypass the Brazilian PTT, would threaten its revenue base and monopolistic control, inviting certain retaliatory action. In the long-run, multinational corporations must develop contingency plans in the event that host countries increase their costs of data transmission prohibitively.[105] The following section builds upon the previous discussion and considers how transborder flow restrictions relate to Brazil's national development plans and the needs of the U.S. multinational company.

---

[105]Joseph L. Sardinas, Jr., Susan Merrill Sawyer, "Transborder Data Flow Regulation and Multinational Corporations," Telecommunications (November 1983): 62.

National Objectives & Concerns

The issue of free flow of data/information and access has divided countries into two camps: those that want unrestricted flow and argue that all parties will benefit, and those that want restrictions to protect their economic development interests.[106] No firm legal answers really exist for questions regarding such things as ownership of transborder flow data; in addition, international information/data services must contend with multiple national regulations. Recognition of the growing importance of data flow and services to international commerce has led various organizations to advance action programs. The Organization for Economic Cooperation and Development's Declaration on Transborder Data Flows calls on countries to refrain from erecting barriers to data flows until questions relating to them can be examined. Developing countries tend to be at a disadvantage since control over transborder data flows is increasingly concentrated with large multinational corporations. The perspectives of these countries must be considered for a more balanced situation in the trade of information services to be achieved.

As taken from Willie Schatz, "Communications: Airing The Issues," Datamation 32 (Jan 15, 1986):

---

[106]S. Konoshima, "Barriers and Prospects for Transborder Data Flow," Bulletin of ASIS 13 (April/May 1987): 32.

> "The marriage of computer and satellite technology is managed and controlled by a handful of developed governments," charges Christopher Nacimento, honorary ambassador of Guyana. "It gives them [developed countries] continued economic and political power and continued domination over the international order.
>
> "You've got a relatively small, cozy club [the OECD] making rules that leave out two thirds of the world." "The major actors aren't that numerous. TBDF permits the major actors to make economic, labor, and other decisions based strictly on their own interest. Organization for Economic Cooperation and Development hardly represents the portion of the world where TBDF has the most impact."

Many countries are politically uneasy about sending economic data abroad for processing and storage, especially if the data are in any way security related and militarily important. This is true whether the data are processed by, or stored in, the computers of government agencies or private firms. The governments are of course more upset if the equipment and technology for telecommunication are in the hands of foreign governments or foreign-controlled private firms (see appendix E for Swedish example).[107]

In a February 1981 report by the National Telecommunications and Information Administration (NTIA), the Department of Defense was described as "legitimately concerned that the United States must not become dependent upon foreign firms to provide vital telecommunication equipment or services nor upon foreign dominated

---

[107]James Basche, "Information Protectionism," Across the Board 20 (September 1983): 43.

technology." If the United States, with all its computers, satellites, and other TBDF equipment, is "legitimately concerned" with these security issues, how much greater must be the concern of countries that now lag far behind the United States in these technological areas. Indeed, a number of countries have justified TBDF restrictions based on national-security concerns alone.[108]

As of 1983, U.S. policy has been articulated clearly in a report prepared under the direction of Senator Robert Packwood (R-Ore.).[109] This document states the long-range telecommunications and information policy goals as defined by constitutional, legislative, executive and national security parameters based on two clear and guiding principles:

> . To enhance the free flow of information across national boundaries; and
>
> . To promote an environment for the provision of telecommunications and information facilities service, and the production and dissemination of the information itself, in which maximum reliance is placed on free enterprise, open and complete markets, and free trade and investment, with minimum direct government involvement or regulation.[110]

---

[108]Ibid.

[109]Long Range Goals in International Telecommunication and Information: An Outline for United States Policy. (Washington: U.S. Government Printing Office, 1983).

[110]R. Chandran; A. Phatak; R. Sambharya, "Transborder Data Flows: Implications for Multinational Corporations." Business Horizons 30 (November/December 1987): 81.

The emerging foreign national privacy protection laws represent one of the many challenges to the domination of the United States on its newest and most important resource--information.[111] The extension of the privacy laws to cover the legal as well as the physical person will have serious repercussions on the ability of multinational corporations to compete internationally because foreign governments will have ready access to highly proprietary corporate information. This information would most likely be used in the alliance between government and business in the target industries.[112] The United States Privacy Protection Act of 1974 is relevant to information-keeping practices of federal agencies only, and, besides lacking a coordinating body, it is less restrictive and less protective than foreign laws, as indicated by Oswald H. Ganley, Deputy Assistant Secretary of State for Technology:[113]

> While differences exist from one country to another, all European and Brazilian laws require that personal data covered by the legislation cannot be transmitted abroad without the assurance that the data will be protected abroad. In succinct terms, the United States is not in a position to provide statutory assurance that data sent into the U.S. will enjoy the same protection as in the country of origin.

The fact that the United States lacks comprehensive

---

[111]Demetri Tsanacas, "The Transborder Data Flow in the New World Information Order: Privacy or Control," Review of Social Economy 43 (December 1985): 368.

[112]Ibid.

[113]Ibid.

privacy protection legislation might lead to a cut-off of information flowing into the country. Such an action will have serious repercussions in the computer and telecommunication industries, in the balance of payments, and in the ability of U.S. multinational companies to compete internationally.[114]

Senator McGovern captured the main ingredients of this vulnerability:[115]

> One way to "attack" a nation such as the United States which depends heavily on information ... cutting off contact between the headquarters and the overseas branches of a multinational firm, taxing telecommunications crossing borders, building information walls around a nation.

The privacy issue has escalated into fears of losing cultural and national sovereignty. Brazil has experienced a great inflow of imported computer/communications services (mostly supplied by the United States and an accompanying outflow of jobs).[116]

As taken from Willie Schatz, "Communications: Airing The Issues," Datamation 32 (Jan 15, 1986):

> "The U.S. deregulates, then tries to get everybody to do it, whether it's good for them or not," says a leading officer of the U.N. University in Tokyo. "They think that privatization is good for everybody. There has to be some sensitivity to other countries'

---

[114]Ibid.

[115]George McGovern, "The Information Age," New York Times, 9 June 1977, p. A21.

[116]Ibid.

> feelings. "It's gotten much worse lately. It's affecting the U.S. internationally by creating unnecessary difficulties and conflicts."
>
> "Most corporate users aren't even aware of the TBDF issue," contends Burnes Hollyman, a consultant for Peat, Marwick & Mitchell. The chief information office is a new position for most corporations. It's more user ignorance and lack of interest than purposefully withholding the data.

The emphasis in TBDF discussions on computer-linked telecommunication networks touches a raw nerve in developing countries. Since the developed nations of North America, Western Europe, and Japan have the technology for advanced transborder communication, the rest of the world must rely on them for much of their information. Within the developed community, the United States and Japan stand above all others in its capacity to produce the hardware used in TBDF and to store and transmit data in existing and planned facilities.[117]

Even if violations of the GATT's Subsidies Code can be found, the remedies imposed would probably be inadequate to bring enough pressure on Brazil to change its informatics policy. The most effective approach for U.S. companies to re-access the Brazilian informatics market seems to be using proposals of extensive research and development or plans to finance the exportation of Brazilian computer products in order to entice the SEI into showing some limited foreign

---

[117]Ibid.

participation in domestic computer production.[118] There seems little else foreign companies can do until Brazil yields to pressure from its own consumers and domestic opposition.[119]

As restrictive TBDF policies begin to eat into what is viewed in the United States as a basic entrepreneurial right of a free, unfettered flow of information, the U.S. will also articulate more strongly its already stated viewpoint that TBDF restrictions, in effect, are non-tariff barriers to trade in information services.[120]

The liberalizing of information services is not necessarily detrimental to every country's interests. Any country that closes itself off from global sources of information maybe condemning itself not only to less information but also less timely information. In a world where information is of central economic importance, such a course can only assure that the country will fall further and further behind.[121]

It is often assumed that the liberalizing of trade in

---

[118]"High-Tech Trade Barrier In Brazil Now A Success," Washington Post, 1 October 1985, p. B1 col. 1.

[119]Anne Piorkowski, "Brazilian Computer Import Restrictions: Technological Independence and Commercial Reality," Law & Policy in International Business 17 (1985): 642.

[120]Geza Feketekuty, Jonathan D. Aronson, "Meeting the Challenges of the World Information Economy," World Economy 7 (March 1984): 64.

[121]Ibid., 84.

information services would work to the detriment of developing countries. Alternatively, it maybe that developed countries will open their markets for manufactured goods produced by developing countries only if they are able to generate jobs in other information industries.[122]

Less developed countries (LDCs) have struggled with the dilemma of whether they should participate in the existing international system. Participation is usually of economic benefit, allowing industries to become competitive in global markets and enabling services to become an increasingly important contributor to gross national product in many less developed countries. The third world has the potential to become serious exporters of services. By choosing to participate actively in a new services regime, developing nations could benefit from internationally available services, their development needs will be addressed, and they will gain the protection of General Agreement on Tariffs and Trade rules and settlement procedures.[123] The GATT principle of national treatment guarantees every country the freedom to regulate but prohibits the discrimination against foreign service-providers.

PROSPECTS FOR LIBERALIZING TRADE IN INFORMATION SERVICES

---

[122]Ibid., 64.

[123]Spero, Joan E., "Opportunities for LDCs in GATT Services Talks," Financier 12 (October 1988): 41.

Towards the end of 1983, Arthur Dunkel, the GATT Director-General, was forming his group of seven 'wise men' after the chairmanship of Fritz Leutwiler, the President of the Swiss National bank, to advise on how to solve current problems with trade in information services. Since Mr. Dunkel was not aware of what might come of the exercise, he requested a consultation with God.

He asked God: "What are the prospects of the United States liberalizing trade in information services?

They are very good,' God said, 'but not in President Reagan's lifetime.'

What about Japan then? Is Japan likely to liberalize trade in my lifetime?

Oh yes,' God said, 'You are still a young man.'

Mr. Dunkel nodded and then asked: 'And what about the Brazilians?'

Arthur, my son,' God said, 'Not in my lifetime.'[124]

Essentially, this joke shows that the policy community remains skeptical that Brazil will ever welcome the General Agreement on Tariffs and Trade liberalizing trade of information services.

This section emphasized the existing conflicts between the needs of a multinational company and those of a host country government, specifically Brazil. Brazil cites

---

[124]As adopted from Geza Feketekuty, Jonathan D. Aronson, "Meeting the Challenges of the World Information Economy," World Economy 7 (March 1984): 86.

national security, technological dependence and the desire to build a domestic information service economy as the main objectives behind its informatics and transborder data flow policies. By describing the situation from each point of view, the following chapter can better demonstrate why Brazil and the multinational corporations are taking the positions they have regarding TBDF and information service trading.

CHAPTER III

CONFLICTING AGENDAS

Brazil

Developing countries are demanding more equitable treatment in the regulation of information flow across their borders. The chief complaint is the continued political and economic power and domination over the international order that the U.S. and other developed governments exercise. The only country to have successfully stopped the data flow over its own borders is Brazil, which has cut itself off from international data links. The developing countries want to work out an agreement requiring transmission fees, but a transborder data flow accord is thought unlikely within the next decade.

During the early 1960s, the Brazilian telecommunication industry was in chaos. Brazil had more than 800 very small, private telephone companies with little or no interconnection. The municipal, state and federal governments all had authority to legislate on the subject, approving expansion plans, equipment specifications,

operation and maintenance polices, rates etc.[125] The major part of the telecommunication services were not directly supplied by the government, as they relied upon concessions given to third party contractors to carry them out. The lack of central policies and guidelines allowed for a disorderly expansion of the telecommunication companies. This lack of central planning led companies to invest in unnecessary areas resulting in, higher cost of service and equipment incompatibilities which further degraded the quality of service.

In 1965, the government formed Empresa Brasileira de Telecomunicacoes, a public trunk and international carrier; in 1972, it created Telecomunicacoes Brasileiras S/A (Telebras), an operational organization and overall administrator of telecommunications. As a result of the improved organization, the phone system grew from 2.4 million telephones in 1973, to about 10 million in 1983. As the Telebras staff became better trained and more modern equipment is installed, telephone service continues to improve. TELEBRAS' initiatives include: planning public telecommunications services, promoting and encouraging training of personnel, and providing technical and

---

[125]Raul Antonio Del Fiol, Jose Eugenio Guisard Ferraz, "National Telecommunications Planning in Brazil," Telecommunications Policy 8 (September 1985): 229.

managerial assistance to the industry.[126] Central to this modernization was a planning process that proved to be flexible and adequate to handle the social and economic disparities of the nation.

As taken from Raul Antonio Del Fiol, Jose Eugenio Guisard Ferraz, "National Telecommunications Planning in Brazil," Telecommunications Policy 8 (September 1985):

> This integration process allowed for a true awareness to be gained of the reality of telecommunications, as it revealed the poor state of the local and long-distance services offered by the existing operating companies and the complete lack of services in most small localities inland. Therefore, in 1972, the federal government decided to create a company, TELEBRAS, which had the government itself as major shareholder with telephone service subscribers having minor participation, which was to be in charge of:
>
> . planning public telecommunications services and promoting their implementation;
>
> . managing the federal government's share participation in the telecommunications companies;
>
> . coordinating and providing technical and managerial assistance to the telecommunications industry and to the R&D agencies;
>
> . aiming to reduce operating costs and promoting greater productivity from investments;
>
> . promoting contracting national and foreign resources; and

---

[126]P.H. Dabbs, F. Cassidy, D. Long, A. Watson, M. Reid, "The World of Telecommunications," British Telecom Journal 5 (Spring 1984): 18.

. promoting and encouraging creation and training of personnel.

Brazil, the 8th largest economy in the world, in terms of gross domestic product, currently has the world's 10th largest telecommunications system. This is sufficient for business needs, but there are plans to improve the overall situation in the future.

By 1978, Brazil[127] imposed a "reserve market share" policy in the informatics area, restricting the manufacture and sale of mini- and micro-computers to 106 Brazilian-owned firms.[128] The Special Informatics Secretariat was created in 1979 to administer the military's informatics policies.[129] Foreign-owned companies could continue producing larger "mainframe" computers for local marketing and export only if the received permission from the SEI.[130]

Brazil's policies regarding TBDF are especially detailed. These policies are based on four main points:

. to maximize information resources located in Brazil, whether locally produced or imported;

. to acquire and maintain national control over the decisions and technologies relating to Brazilian

---

[127]"Brazil's Ban on Small-Computer Imports Aids Domestic Firms But Drives Prices Up," Wall Street Journal, 4 October 1982, p. 38.

[128]"New Law Affects Brazil's Big 'Informatics' Market," Business America 10 December 1984, p. 44.

[129]"Brazil's Restrictions on Minicomputers are Here to Stay," Business Latin America 18 January 1984, p. 22, col. 1.

[130]Ibid.

industries;

. to broaden public access to information; and

. to administer information resources in such a manner as to enhance the country's cultural and political environments.[131]

Brazilian policy distinguishes between commercial TBDF, in which data are the actual object of trade, and corporate TBDF, in which the data are used to support other economic activities. Restrictions are stricter on commercial TBDF; data processing and communications must be done nationally through the Postal, Telephone and Telegraph Authorities, and database access must be done via the PTT, preferably through a Brazilian institution. All corporate transborder data flow must be done on the same basis with the exception of person to person communications which are unrestricted. As in most other countries, all international communication links are subject to government approval.[132]

The use of international data-communication links by transnational companies and the possible impacts of these links have been studied by the United Nations Centre on Transnational Corporations. The importance of transborder data flows for Brazil is based on their almost exclusive use

---

[131]K. F. McCrohan; L. S. Lowe, "Non-Tariff Barriers to International Data Flow." Industrial Mgmt & Data Systems (May/June 1988): 10.

[132]Ibid.

by transnational corporations. Seeing themselves as part of the international community, Brazil has sought to create an adequate telecommunication topology. This includes a centralized but not a single gateway structure for all international data traffic, consisting of physical protocol-conversion interfaces and a means for transborder data flow convergence. The purpose of such a configuration is to protect the country's integrity by administering transborder data flows in a manner that Brazil's networks will not become mere appendices of off-shore networks.[133]

Brazil, in March 1985, elected its first civilian president in over 20 years,[134] with that, military sought to cement its informatics policy by introducing a bill in Congress to extend its market reserve informatics policy for eight more years.[135] Initially, national security justified Brazilian protectionism in the informatics area,[136] economic concerns ultimately spurred the passage of the informatics law. Also, Brazil's transborder data flow policy helps to assure its society's independence from foreign information

---

[133]United Nations, Transborder Data Flows and Brazil. (New York: United Nations Centre on Transnational Corporations, 1983).

[134]Anne Piorkowski, "Brazilian Computer Import Restrictions: Technological Independence and Commercial Reality," Law & Policy in International Business 17 (1985): 622.

[135]"Tighter Restrictions on Informatics Loom in Brazil," Business Latin America 15 August 1984, p. 257, col. 1.

[136]"Brazil's Ban on Small-Computer Imports Aids Domestic Firms But Drives Prices Up," Wall Street Journal, 4 October 1982, p. 38.

resources. Brazil, along with other developing countries and some technologically advanced countries such as France and West Germany, has been disturbed by possible "information imperialism" by Japan and the United States.[137]

These governments fear that the countries they depend on for foreign computer technology will not always fulfill their needs. They suspect that foreign countries may withhold technology as a political maneuver or may restrict their technology exportation for purely domestic reasons.[138] Brazil's solution to "domination of society without any prospect of liberation"[139] is to encourage the development of its own technology in the informatics industry.[140] The most effective way to achieve this, in the view of the SEI, is to ensure Brazilian manufacturers a captive domestic market.[141]

Three interpretations may be offered for the Brazilian informatics law: the law may simply be a codification of the existing information policy; it may be understood as an attempt to make the system more uniform, resulting in the

---

[137]"Brazil Curbs Computer Competition," New York Times, 8 October 1984, p. D1, col. 3.

[138]"Brazil Outlook: Brazil," Business Latin America, 28 March 1984, p. 100.

[139]"Brazil Curbs Computer Competition," op cit.

[140]"Technology Debate: Moves to Control Information Industry Split Brazilian Politicians, Businessmen," Washington Post, 29 August 1984, p. A21, col. 1.

[141]"Brazil Curbs Computer Competition," New York Times, 8 October 1984, p. D1, col. 3.

application of more objective standards to government investment and import decisions; or it may be an indication that restrictive policies will be more effectively enforced.[142]

The informatics law also created an administrative structure, the National Council of Informatics and Automation (CONIN), which is vested with the policy-making authority formerly held by the SEI.[143] CONIN includes an unspecified number of government representatives that answer directly to the president[144] (currently 14, including the Secretary General of the National Security Council and the Planning Secretary) and eight representatives of other nongovernmental entities (including representatives from trade associations and one noted expert in the science and technology field),[145] each serving three year terms.[146] Most

---

[142]Anne Piorkowski, "Brazilian Computer Import Restrictions: Technological Independence and Commercial Reality," Law & Policy in International Business 17 (1985): 629.

[143]Unclassified U.S. Comm. Dept. Doc., 1984, subject: Translation of Brazilian Law No. 7.232, Oct. 29, 1984, Arts. 6, 7, (on file at the offices of Law & Policy in International Business.

[144]Ibid., art. 5, par. X.

[145]Ibid., art. 6; Unclassified U.S. Comm. Dept. Doc., subject: Informatics Policy Structure (prepared by Linda G. Bawer, 16 January, 1985)(on file at the offices of Law & Policy in International Business).

[146]Unclassified U.S. Comm. Dept. Doc., 1984, subject: Translation of Brazilian Law No. 7.232, Oct. 29, 1984, art. 6, par. 5, (on file at the offices of Law & Policy in International Business.

significant among CONIN's responsibilities is the submission of a national informatics plan every three years.[147]

Albeit, some relaxation of policy may be forthcoming, at the present time, mid-sized computers still may not be sold in Brazil unless they are manufactured in Brazil by a Brazilian-controlled company. This means that if a foreign company places a computer-manufacturing subsidiary in Brazil, it must either export all of its products or accept Brazilian control, hence "the national company rule." Brazil may also establish a "software registry" and use it to discourage use of foreign software by reducing income taxes for purchasers of local software.[148]

Senator Roberto Campos, who opposed the law, asserts because of it, Brazil will always have more expensive products made with obsolete technology.[149]

The market reserve policy was instituted for accelerating the nationalization of equipment, for generating and developing an appropriate technology, and for promoting the existence of at least two manufacturers for each type of equipment. The basic objectives of this

---

[147]Ibid., art. 7, par. II.

[148]Steve Moore, "Information Managers Must Face the International Communications Web," Data Management 70 (June 1984): 30.

[149]"Brazil Curbs Computer Competition," New York Times, 8 October 1984, p. D1, col. 3.

policy[150] were to:

- reach an adequate level of autonomy, so that technological and industrial decisions were made within the country;
- reduce the dependence of the industry on imports;
- reduce the costs of producing and installing the equipment used in the national telecommunications system; and
- encourage the development of Brazilian manufacturers so as to become qualified to generate their own technology, either by themselves or supported by a specific R&D agency.

By lifting the ban on computer imports and merely restricting their number, Brazil could continue to work with the latest technology. Some foreign experts view Brazilian computer technology as already being outdated by at least five years.[151] Once such a gap is created, the rapid pace of advances in the informatics industry will make it unlikely that Brazil will be able to catch up.[152] The availability of state of the art technology would reduce the need for an extensive black market. Pirating, however, could remain a problem until the Brazilian government recognizes that

---

[150]Raul Antonio Del Fiol, Jose Eugenio Guisard Ferraz, "National Telecommunications Planning in Brazil," Telecommunications Policy 8 (September 1985): 229.

[151]Unclassified U.S. Comm. Dept. Doc., Oct., 1984, subject: Translation of Brazilian Law No. 7.232, Oct. 29, 1984 (on file at the offices of Law & Policy in International Business).

[152]"Brazil's Ban on Small Computer Imports Aids Domestic Firms But Drives Prices Up," Wall Street Journal, 4 October 1982, p. 38; "Brazil Says 'No Thanks' to Foreign Computers," International Management September 1984, p. 83.

foreign rights in hardware and software designs deserve protection.[153]

Critics of the market reserve policy also complain about the cost, quality and servicing of Brazilian computers.[154] Although the new informatics law has attempted to solve the quality and servicing problems,[155] the higher costs cannot be disputed. As of late 1984, Brazilian-made computers cost anywhere from two to eight times the amount charged on the international market for similar equipment.[156]

Realizing this, Brazil tried to encourage research and development. National firms were granted incentives for the implementation of research and development, as well as for production projects authorized by the SEI.[157] The incentives available to national companies include exemptions from import taxes for imports that have no domestically produced

---

[153]Anne Piorkowski, "Brazilian Computer Import Restrictions: Technological Independence and Commercial Reality," Law & Policy in International Business 17 (1985): 633.

[154]Unclassified U.S. Comm. Dept. Doc., Oct., 1984, subject: Translation of Brazilian Law No. 7.232, Oct. 29, 1984 (on file at the offices of Law & Policy in International Business).

[155]Unclassified U.S. Comm. Dept. Doc., Oct., 1984, subject: Translation of Brazilian Law No. 7.232, Oct. 29, 1984 (on file at the offices of Law & Policy in International Business).

[156]"Brazil's Ban on Small Computer Imports Aids Domestic Firms But Drives Prices Up," Wall Street Journal, 4 October 1982, p. 38.

[157]Unclassified U.S. Comm. Dept. Doc., 1984, subject: Translation of Brazilian Law No. 7.232, Oct. 29, 1984 (on file at the offices of Law & Policy in International Business.

substitutes;[158] exemptions from export taxes and excise taxes;[159] accelerated depreciation;[160] and deduction of double the amount spent on research and development or manpower training programs given prior approval by the SEI.[161] Beneficiaries of such incentives are required to invest a certain percentage of their benefit in the creation, development or adaptation of technology, or, if the investment project is not approved, must pay a corresponding sum into the treasury.

Brazilian business persons are concerned about the effect of the law on the Brazilian market. They see their competiveness against imported goods and services threatened by their inability to obtain current computer technology.[162] They fear drastic consequences for segments of the industry dependent on keeping up with state of the art technology.[163]

---

[158]Unclassified U.S. Comm. Dept. Doc., 1984, subject: Translation of Brazilian Law No. 7.232, Oct. 29, 1984, Art. 13, par. I, (on file at the offices of Law & Policy in International Business.

[159]Ibid., Art. 13, par. II, III.

[160]Ibid., Art. 13, par. IV.

[161]Ibid., Art. 13, par. V.

[162]1 International Trade Report 158 (1984).

[163]Ibid.

In a positive sense, local computer companies have grown in number from two to 200 between 1978 and 1985,[164] and currently continue to grow by about 30 companies per year.[165] Sales approached $1 billion in 1984, up from $150 million in 1978.[166] National companies have increased their share of the Brazilian informatics industry from 226 to 516.[167] The new informatics industry employs 18,000 people.[168] Although in 1984 over 2000 products were removed from Brazil's prohibited imports roster in order to relieve federal deficit and liquidity problems, Brazil continues to extend market reserve coverage as soon as local manufacturers begin developing any new product in the informatics area.[169]

Multinational corporations are allowed to market goods and services in Brazil which are "considered of relevant interest for scientific and productive activities;" and for

---

[164]"Brazil's Protected Computers; U.S. Threat Spurs Rift," New York Times, 16 September 1985, p. D8, col. 1.

[165]"High-Tech Trade Barrier In Brazil Now A Success," Washington Post, 1 October 1985, p. B1 col. 1.

[166]"Foreign Firms Excluded from Brazil's Drive To Build Minicomputers," Business Latin America 4 January 1978, p. 1, col. 1.

[167]"Brazil's Protected Computers; U.S. Threat Spurs Rift," New York Times, 16 September 1985, p. D8, col. 1.

[168]Ibid.

[169]"Business Outlook," Business Latin America 26 September 1984, p. 308.

which there is domestic technological capacity.[170] However, marketing and manufacturing plans of multinational corporations must: 1. obtain the approval of CONIN, 2. support research and development in Brazil, 3. provide for exportation of some portion of their products and, 4. encourage the development of local suppliers.[171]

The nexus between Brazil's hardware, software and transborder data flow policies all have the same element in common. Each of these informatics groups are under government regulation to promote Brazil's information economy. Unlike transborder communication, refusing to allow foreign firms to import informatics hardware and software can be seen as a violation of Brazil's membership with the General Agreement on Tariffs and Trade. As a non good, transborder communication services is currently outside the GATT's jurisdiction. However, the 1989 GATT Uruguay Round of negotiations have made significant progress to include services within its multilateral framework. An answer should be forthcoming within the next two years.

To summarize the previous section, Brazil is using transnational data flow and informatics policies as a vehicle to propel itself into an information society. Brazil has made notable progress in the last three decades,

---

[170]"Brazil, Tax: New Informatics Law," International Business Law (March 1985): 101-03.

[171]Ibid.

from general state of telecommunication chaos to the tenth largest telephone network in the world. Although Brazilians largely welcomed the original informatics law, the law was not without its foreign and domestic critics. Brazil chose a novel approach to building a domestic informatics industry. Other developing or newly industrialized countries such as South Korea, Singapore, Taiwan, Mexico, Argentina and Spain encourage foreign companies to enter their countries in hopes of gaining access to the latest informatics technology.[172] The following section presents the multinational corporation's perspective on doing business in Brazil. U.S. companies are dealing with regulatory issues on a case by case basis. Some companies are questioning whether the Brazilian market is worth the effort.

---

[172]"Brazil Curbs Computer Competition," New York Times, 8 October 1984, p. D1, col. 3.

The United States Multinational Corporation

The Brazilian market, currently the world's eighth largest market[173] and expanding rapidly, is of vital interest to foreign investors.[174] Under the new informatics law, U.S. companies have been forced to relinquish their share of Brazil's mini- and micro-computer market.[175] Companies unable to rely solely on the export production of large computers were forced to close their Brazilian branches, suffering great financial loss.[176] Neither U.S. export computer companies nor the United States Government have found an effective way to counter Brazil's protectionist informatics policy.

During the 1980 Congressional hearings on international data flows in 1980, most U.S. companies appeared not to be much bothered by the issues. The few that were represented came mainly from the segment of U.S. business that provides

---

[173]"President to Announce Clearer Trade Policy Stance On Opening Markets Abroad," International Trade Reports (BNA), 11 September, 1985, p. 1100 (White House Fact Sheet).

[174]"IBM Mounts Publicity Drive in Brazil Hoping Computer Restrictions Will End," Wall Street Journal, 13 January 1984, p. 27, col. 1.

[175]"Brazil's Restrictions on Minicomputers are Here to Stay," Business Latin America 18 January 1984, p. 22, col. 1.

[176]Anne Piorkowski, "Brazilian Computer Import Restrictions: Technological Independence and Commercial Reality," Law & Policy in International Business 17 (1985): 620.

international communications services and not from the much larger number of firms that are the users of those services. The issues in large part have not been resolved. Some business executives whose firms still rely on the telephone, telex, and postal systems may believe TBDF issues do not apply to them. But complacency of that kind would be a mistake. The time may come when countries believe that they should control or regulate all transborder flows of information, whether transmitted electronically or not.[177] In fact, the questions have grown in number and breadth of concern. They include privacy, technical, economic, and political issues.[178]

In 1983, Philco (a consumer electronics subsidiary of Ford Motor Company) was forced to close their Brazilian integrated circuits plant that had produced silicon chips since 1979.[179] This was due to an SEI ruling that the market reserve policy applied to semi-conductors.[180] The plant was sold to groups controlling 100% of the capital (sale price U.S.: $9 million, $21 million less than Philco had invested

---

[177]James Basche, "Information Protectionism," Across the Board 20 (September 1983): 33.

[178]Ibid.

[179]Anne Piorkowski, "Brazilian Computer Import Restrictions: Technological Independence and Commercial Reality," Law & Policy in International Business 17 (1985): 634.

[180]Ibid.

in the plant during the previous three years).[181] Brazil rejected IBM's original plan to export over $2 billion in computer goods from 1983 to 1987, IBM exported only about one-half of this amount during that period.[182] IBM's new investment in Brazil fell to $80 million in 1983 from $176 million in 1982.[183] Burroughs Corporation had cut its investment in Brazil by one-third since 1980, and had cut its workforce from over 5,000 to about 3,000.[184] Since it could not afford to sell only large computers, Sperry Corporation was forced to sell its local subsidiary.[185] In a more direct action, the SEI ordered Racal Milgo Inc. to sell its minority holding in Brazil's largest local modem maker and pressured other foreign electronics companies to give up similar interests.[186]

Non-computer related U.S. companies which rely heavily on electronic information transfer for their businesses are also having trouble in Brazil. United Press International (UPI), which markets its news service locally, has had difficulty obtaining spare parts for its U.S. made

---

[181]"Brazil Says 'No Thanks' to Foreign Computers," International Management (September 1984): 83.

[182]Ibid.

[183]Ibid.

[184]Ibid.

[185]Ibid.

[186]Ibid.

machines.[187] Spare parts made in Brazil are often incompatible, and the only other option is to replace the entire system, a very costly venture.[188] Reuter's Stockmaster Service is meeting obstacles in obtaining a license to introduce more sophisticated equipment to replace and upgrade existing equipment.[189] In another example, Pan Am, which uses transborder communications for flight information and reservations, is finding that problems in procuring parts for U.S. - made equipment have threatened the dependability of its current system.[190]

There are primarily two types of information that are needed at a corporate headquarters: internal data relating to operations, sales and so on, and external data composed of information gathered or purchased on such topics as economic forecasting and consumer trending.[191] Available evidence suggests that the number of transnational corporations with world-wide computer systems is in the

---

[187]Ibid.

[188]Ibid.

[189]Ibid.

[190]Ibid.

[191]S. Samiee, "Transnational Data Flow Constraints: A New Challenge for Multinational Corporations." Journal of International Business Studies 15 (Spring-Summer 1984): 142.

hundreds.[192] The type and amount of data transferred to the home office varies considerably, depending on the degree of the firm's centralization, industry type, size and subsidiary locations.

Hypothetically, if a multinational chemical manufacturer requires that data files be transmitted from its subsidiaries located in less developed countries to the corporate home office for central processing, duplicate processing in the subsidiary country usually is less efficient. Unfortunately, when local processing is required by law, some firms actually become less efficient through duplication of equipment, software and personnel. Banks, airlines, hotels, stockbrokers, and credit card firms are among the industries that need instantaneous transborder flows of data. In some cases, it is possible for local subsidiaries to prepare certain types of reports locally and transmit complete data files for comprehensive processing to the headquarters.

Typically, the transborder data flow needs of the multinational corporation vary with the degree to which its operations are centralized. Two factors, speed and accuracy, are important to any firm but are not necessarily affected by management type. For a diversified

---

[192]United Nations, Transnational Corporations and Transborder Data Flows: A Technical Paper. (New York: United Nations Centre on Transnational Corporations, 1982): 31.

multinational company with a large international network operation, speed of data processing and follow-up reports are likely to be higher than if firm is decentralized. Likewise, the accuracy of the data will be better because the subsidiaries can check and verify possible errors.[193]

Multinational corporations accustomed to a relatively centralized management style are likely to be more affected by TBDF restrictions. Such firms pay a high price for tighter control over their subsidiaries and requiring detailed information that they need for management operations. The higher costs of transborder data flow processing for centralized MNCs results from various factors: added administrative costs; possible delays in securing government approval for file transmission; the need for larger and more reliable central data processing system to accommodate the multinational corporate network; the need for a more sophisticated data processing system; and the increased likelihood of data piracy.[194] The latter can be particularly expensive for a firm if proprietary information pirated during data transmission.

The sophistication issue is an important one for centrally managed and controlled firms. In a totally

---

[193]Samiee, S. "Transnational Data Flow Constraints: A New Challenge for Multinational Corporations." Journal of International Business Studies 15 (Spring-Summer 1984): 143.

[194]Ibid.

centralized firm, the headquarters is responsible for receiving data transmission, processing it and returning the complete information to each subsidiary. As transborder data flow restrictions increase, the firm's ability to conduct its business in a centralized manner will be increasingly hampered.

Alternatively, a decentralized firm will encounter fewer problems resulting from TBDF regulation. Nevertheless, in the absence of universally accepted transborder data flow guidelines, the multinational corporation is forced to strike a balance between its management style, at least as far as the style pertains to its informational needs.[195]

Brazil has effectively introduced the most comprehensive information export industry policies of any nation. Governments and corporations around the world are watching closely. Realignments in the pecking order of national information industries will continue as various governments establish policies that reflect their individual concerns. Parenthetically, it is ironic that Brazil, through its policies designed to prevent foreign domination of its information industry (particularly by the U.S.), has become a source of alarm for Peru and other South American

---

[195]Ibid.

countries who fear Brazil may dominate them.[196]

Barriers to the movement of information internationally have become a major issue for corporate management and public policymakers. Businesses operating abroad no longer have a clear path for inaugurating new information-based services, for transmitting data essential to their production needs, for moving customer or employee information from one country to another. They cannot assume that they can take advantage of economies of scale and cost-efficient telescoping of time and distance through telecommunications and information technology. Today, these objectives no longer ride on the question of can it be done, but rather will it be allowed by governments -- and at what price.[197]

Advances in information/telecommunications technology have made possible substantial expansions in the operations of multinational corporations. However, increasing international concern has focused on the economic, legal, and social impacts of transborder data flows. TBDF regulations protect domestic competitors by requiring internationally transmitted data to be locally processed and restricting transmissions to national data networks.

---

[196]Steve Moore, "Information Managers Must Face the International Communications Web," Data Management 70 (June 1984): 30.

[197]Joan E. Spero, "Barriers to International Information Flows," Telecommunication 17 (November 1983): 67.

Multinational corporations are finding increasingly, that their data transmissions are being subjected to close scrutiny, especially when they involve name-linked data. MNCs with highly centralized systems are being most affected by TBDF barriers as they must conform to possibly conflicting regulatory provisions in different host nations. Contingency planning will be the best means for Multinational corporations to deal with restrictions and threats to transborder data flows.[198]

Due to the strategic and economic importance of telecommunication services, along with projected growth rates in the information industries, countries have adopted policy restrictions on the transborder data flow, both into and out of their countries. The short-term effects for multinational industries have included an increase in data processing costs and a loss of efficiency. The possible impacts of these restrictions on world trade could be staggering since the efficient and economical flow of information is critical to most kinds of commerce.[199]

The major motives of national governments for imposing barriers to transborder data flow tend to be support of the

---

[198]Rolf T. Wigand, "Transborder Data Flow: Its Impact on Business and Government," Information Mgmt Review 1 (Fall 1985): 55.

[199]Kevin F. McCrohan; Larry S. Lowe, "Non-Tariff Barriers to International Data Flow," Industrial Mgmt & Data Systems (May/June 1988): 8.

nation's indigenous data processing industry and maintaining national security. Key areas for potential barriers are international telecommunication networks and policies. The national telecommunication administrations set the prices, tariffs, and conditions of use for international data circuits. The failure of telecommunication tariffs to relate to the costs of communication technology is due to such factors as the desire to maintain essential public facilities. Notwithstanding, countries that pursue a restrictive policy face the danger of having the mainstream of communication technology bypass them, while their domestic industry lacks economies of scale and a competitive environment.[200] Concern over privacy protection and cultural preservation provided the initial impetus for much of the legislation now in force. However, governments worldwide have now broadened their legislative involvement in the computer industry beyond the privacy issue, to influence trade and information services as well.[201]

As taken from Joan E. Spero, "Barriers to International Information Flows," Telecommunication, 17 (November 1983):

> Despite this trend, business and government have been slow to comprehend the implications of the issues and to respond. There are a number of reasons for this:
>
> . Businesses were long accustomed to a permissive

---

[200]Harry H. Collier, "Dataflow Across National Borders," Data Processing 27 (September 1985): 9.

[201] Therese Sheehy, "Transborder Data Flow - An Issue with Global Implications," Data Management 22 (November 1984): 28.

regulatory environment in the field of international telecommunications that was conducive to the free flow of information. U.S. business, moreover, enjoyed an expansive domestic market free of restrictions in the movement of information.

- When restrictions arose in other countries, technical solutions, however costly, were often available, and, to a great extent, they continue to be. As a result, each new restriction tends to be seen as an isolated problem, and not as a part of a broader trend toward a more restrictive environment with long-range business implications.

- Complex and rapid technological change has limited the ability of non-technical senior managers and public policymakers and public policymakers to recognize potential problems or principles involved in restrictions.

- Even when it recognizes a problem, a corporation may be extremely reluctant to discuss that problem publicly. The desire to negotiate a technical solution and the fear of retaliation from foreign governments or telecommunications authorities continue to cause companies to remain silent about their telecommunications difficulties.

One fundamental reason for the inability to recognize problems is poor communications within companies between technical managers and senior corporate policymakers. On the one hand, members of senior management have been reluctant to become involved in technical matters outside their ranges of expertise. On the other, telecommunications and data processing managers have dealt with restrictions primarily as technical problems, and have often hesitated to bring these problems to the attention of senior management. Too often, there is little interaction between the two, and the result is paralysis or, worse yet, complacency.

Today, lack of attention to information issues can be calamitous. Companies are introducing computer communications at a rapid pace. Data communication has become an essential tool for aspects of international production, planning, marketing and sales, inventory control, financial management, and customer service. A 1982 survey of 89 companies in nine countries by Business International reveals that for approximately 87 percent of the companies interviewed, computerized information flows play an important or very important role in at least one corporate activity. In five years, the proportion will rise

to 92 percent.

Most developing or newly industrialized countries encourage the latest technology in their emerging industries.[202] Brazil, upon determining that technological independence was necessary for economic and military security,[203] imposed a policy of protectionism intended to foster its domestic informatics industry.

In May 1984, at a meeting of Latin American nations sponsored by Colombia and UNESCO'S Intergovernmental Bureau for Informatics, delegates endorsed Brazil's policy and responded favorably of controlling computer [transborder transmission] technology to guarantee national sovereignty.[204] The world's informatics industry will continue to follow the developments in Brazil with particular care. Special Informatics Secretary Joubert de Oliveiro Brizida feels that Brazil serves as a model for other developing nations anxious to avoid total dependence on foreign computer technology.[205]

The law on information technology has been enacted in Brazil as a means of developing an autonomous Brazilian

---

[202]"Brazil Curbs Computer Competition," New York Times, 8 October 1984, p. D1, col. 3.

[203]"Brazil's Restrictions on Minicomputers are Here to Stay," Business Latin America 18 January 1984, p. 22, col. 1.

[204]Ibid.

[205]Unclassified U.S. Comm. Dept. Doc., January 1982, subject: Preliminary Report on Brazil's Informatics Policy.

informatics industry. Article 8, Section VI of the law prohibits, until 1992, the importation of any informatics product without the price approval of the Special Secretary of Information. Article 8 virtually prohibits importation of informatics goods and services from abroad. In addition, a variety of fiscal and taxation incentives are offered exclusively to Brazilian informatics firms, which gives them a favored position, even when their importation is allowed. While this restrictive posture has caused conflict, especially with developed countries interested in the Brazilian consumer market, it appears that the U.S. will not be implementing retaliatory measures. However, the means of resolving economic conflict via the General Agreement on Tariffs and Trade should not be ignored. GATT principles can be a basis for solving the impasse between the U.S. and Brazil in the informatics area by use of nondiscrimination between national and imported products provisions.[206]

In summarizing this section, as the 1989 Uruguay Round of GATT discussions conclude, the General Agreement on Tariffs and Trade is closer to becoming the world's only trade in service forum. This enactment would give U.S. multinational firms a more rigid platform when trading services in Brazil. For Brazil and most of the third world members, competition between informatics services will

---

[206]Eduardo Salomao Neto, "GATT and the Brazil-US Technology Conflict." International Financial Law Review 8 (January 1989): 38.

result, whether they are ready or not. In terms of transborder data flow, increased flow of information across nation boundaries will take place.

The final chapter projects the GATT's success with service trading, specifically transborder data flows between the U.S. multinational companies and Brazil. All indications show that the GATT is expected to receive trade in service jurisdiction within the next two years.

CHAPTER IV

CONCLUDING REMARKS

Most people agree that unrestricted access to many types of information is a precondition of social, political, and economic power and that lack of access can result in serious disadvantages. However, the supposed inequity of the present transborder data flow situation is not agreed upon. The lack of definition of the terms involved and, particularly, the lack of consensus on the meaning of data are part of the difficulty. In 1983, the Intergovernmental Bureau for Information (IBI) published a world survey on transborder data flow. Of the 159 United Nations members, only 35 responded, and more than 50% of those were from Africa and Latin America.[207] Results have shown that the most common reasons for transferring data abroad included financial management, customer relations, and product distribution details. The majority of responding governments favored the establishment of a legal framework for information products and services. Governments also

---

[207]John Williamson, "Social, Economic Inequities Fuel Arguments for Data Flow Strictures," Communication Age 2 (June 1985): 38.

indicated a concern about the vulnerability and dependence aspects of TBDF.

Today, it is necessary to recognize the interrelationships between telecommunication policies and trade policies, particularly with regard to trade in data-related services, and their effects on the world economy. Agreement with regard to trade in telecommunication and computing services could provide the basis for a 'core' agreement on trade in information services. Those countries which are able to recognize the needs and the opportunities in these early days are likely to reap the greatest benefit.[208]

If the General Agreement on Tariffs and Trade continue to use pragmatism and tolerance, its effectiveness will be assured: Contracting Parties will proceed to accept the efforts towards regional integration among developing countries, even if these efforts do not strictly comply with the letter and the spirit of Article XXIV of the GATT.[209]

The current informatics policy in Brazil probably will undergo change. Consumers will refuse to buy the unreasonably priced computers and will turn to the black market. Manufacturers and exporters of goods, dependent on

---

[208]Peter Robinson, "Telecommunications, Trade and TBDF," Telecommunications Policy 11 (December 1985): 318.

[209]Bettina Hurni, "How To Use GATT Effectively," EFTA Bulletin 28 (January-March 1987): 18.

state of the art technology will complain about decreasing profits as foreign goods surpass them in technological advancement.

Further, Brazil's informatics law is too restrictive. In its attempt to create a domestic informatics industry, Brazil is isolating self from the technological revolution. The protection of the informatics law harms the competitiveness of Brazilian goods and services, which requires state of the art technology to compete both in the domestic and on the international market. Meanwhile, Brazilian consumers have born the cost of developing the new informatics technology.[210]

Transnational data flows have rendered the once formidable barriers of time, space and national boundaries virtually meaningless where informational transactions are concerned.[211] Almost all attempts by lesser developed countries to restrict data flowing across their borders have failed. The exception is Brazil, which has closed their borders to foreign data processing and communications processing equipment and significant international data links. But Brazil's word probably carries more weight than

---

[210]Anne Piorkowski, "Brazilian Computer Import Restrictions: Technological Independence and Commercial Reality," Law & Policy in International Business 17 (1985): 644.

[211]Dennis Holden, "International Data Flows," United States Banker 96 (November 1985): 60.

any other third world nation's word.[212] In a country like Brazil, U.S. corporations continue to go along because they're doing business there. But if Upper Volta ever adopted Brazil's approach, they'd be out of luck. The market isn't worth it.[213]

Monitoring of the legal and regulatory communication environment is critical. Companies might build contingency plans concerning telecommunication and information issues into their planning process.[214] In any event, transnational corporations are advised to maintain a high level of expertise to notice new legislation and to assess its potential impact upon the company. The expertise may come from within or be hired externally. Average consulting fees in 1983 were reported to be in the $250,000 range, if a firm decided not to do its homework in-house.[215]

Additionally, U.S. companies could work with the Brazilian government in an attempt to re-access the Brazilian market. In return for a share of the Brazilian market, these companies could trade advanced technology, trained personnel (to help create research and development

---

[212]Ibid.

[213]Willie Schatz, "Communications: Airing the Issues." Datamation 32 (15 January 1986): 35.

[214]Ibid.

[215]S. Samiee, "Transnational Data Flow Constraints: A New Challenge for Multinational Corporations." Journal of International Business Studies 15 (Spring-Summer 1984): 144.

programs), export proposals (for equipment produced jointly by foreign and domestic companies), or loans for Brazilian computer manufacturers.

In the past fifteen years or so, the General Agreement on Tariffs and Trade through international trade policy has aspired to become a comprehensive manager, not only of transactions between countries, but even of investment and production decisions of private firms. This management has been accomplished through continuing negotiations. As most of these negotiations are bilateral, the General Agreement on Tariffs and Trade, as a code of general policy rules and as a multilateral forum, has lost some of its effectiveness. The unique functional character of the General Agreement on Tariffs and Trade began as a "single track" institution. It was to be a technical forum in which the issues of trade relations would be dealt with on their own merits, apart from "high foreign policy" considerations, with trade issues travelling along their own track, not interfering with traffic elsewhere. In contrast, contemporary economic diplomacy, and the new protectionism in particular, operate mainly by linking diverse political issues.

The outcome in the General Agreement on Tariffs and Trade will depend largely on the spirit and general political justification of these arrangements, jointly with their technical detail. The General Agreement on Tariffs and Trade functions satisfactorily only as long its core

members have roughly the same conception of the trade regime they wanted to maintain, namely, one emphasizing nondiscrimination. Even so, the GATT has been fully effective only in the realm of tariff policy and throughout its existence has fallen short of effectively dealing with quantitative restrictions.

In September 1986, trade ministers and representatives from 92 countries met to launch a new round of multilateral trade negotiations that would improve and reinvigorate the General Agreement on Tariffs and Trade. These multilateral negotiations came to be known as the Uruguay Round. The purpose of the four year Uruguay Round was to evaluate the progress made since its beginning and to outline objectives for each of the 15 negotiating groups for the remaining two years of the round. Some important agreements were achieved. For example, trade ministers were able to reach a landmark agreement to revise GATT to incorporate services (including trade in information services) and to strengthen several other significant areas of GATT rules and procedures. As of December 1988, the Uruguay Round's mid term review, the GATT's effectiveness in dispute settlement was notably improved, and GATT was given a stronger role in monitoring trade policies.

During past years, GATT has been less attentive to the needs of modern commerce mainly because it has not kept pace with recent economic developments, the Uruguay negotiations

are attempting to remedy the situation. Services, which include telecommunications (transborder data flow), insurance, and tourism, represent the fastest growing segments of the U.S. economy. Still, there are no rules to oversee international transactions in these fields. Nevertheless, the General Agreement on Tariffs and Trade is closer to assuming the responsibility as the world's only forum for trade in information service dispute resolution.

APPENDICES

Appendix A

Profile of Brazil, as taken from Raul Antonio Del Fiol, Jose Eugenio Guisard Ferraz, "National Telecommunications Planning in Brazil," Telecommunications Policy (September 1985):

Brazil is a federal republic consisting of 23 states, three territories and the Federal District. It occupies about 8.5 million square kilometers of the South American continent and borders on all South American countries with the exceptions of Chile and Ecuador. The population is estimated at 130 million (1984) and the per capita income is US$ 1669 (1984). The climate ranges from equatorial in the Amazonian states to temperate in the south and semi-arid in the north east.

Brazil is a newly industrialized country. It is a major industrial power in South America, being fairly self-sufficient in car manufacturing, armaments, shipbuilding and light industries such as electronics. Industrial production accounts for 32% of its GNP. Agriculture also plays an important role in the Brazilian economy, accounting for 14% of the GNP. A large variety of products are cultivated such as coffee, soybean, sugar, corn, cocoa and rice. Cattle raising is also an important agricultural activity. In the mining area, Brazil is a major producer of iron ore, bauxite, manganese ore, tungsten, thorium, semi-precious stones, etc. The quality of these products have earned Brazil a growing share of the world market. Total exports in 1984 were on the order of US$ 27 billion.

One of Brazil's most important assets is human resources. Brazil's diverse population is composed of descendants of Europeans, Africans and Asians (mostly Japanese). All these groups are endowed with various skills that have enhanced Brazil's economy and accounted for its rapid growth in recent years. Despite the cultural diversity of its population only one language is spoken in the country -- Portuguese. There are no dialects and a Brazilian culture is well established throughout the country.

Brazil also has its share of problems, which are, in some respects, as big as its territory. Rapid economic growth in the 1970s was largely sustained by increasing

external debt that today reaches U.S. $100 billion and heavy internal government debt. At the same time the economy started an inflationary process that surpassed the level of 1000% per year.

All these problems require a careful approach to their solution. The social equilibrium, in an environment characterized by extreme diversity in the economic conditions of the populations, is necessarily weak, and as such could be broken by the use of highly recessive methods.

Appendix B

As taken From Anne W. Branscomb's Global Governance of Global Networks.

Variation in the definitions that commentators have ascribed to the term **transborder data flows** contribute to the confusion in current discussions. No ambiguity exists in the definition of **transborder**, which means across national political boundaries, or **flows**, which means movement. No consistent construction exists, however, for the term **data**. According to the dictionary, data are "something upon which an inference or an argument is based or from which an intellectual system of any sort is constructed." Data basically are the raw material from which people develop information and knowledge. The current primary concern in discussions of transborder data flow, however, clearly is about computer generated information. People have transported data across geographical boundary lines in many forms and by many means for centuries. Therefore, all data presently in existence cannot be of concern; rather, debate centers around a specific kind of data that specific types of transmission systems transport. Many descriptions of this data exist. For example, Fishman speaks of "electronic movement of data between countries."[216] Turn discusses "transmission over computer-communications systems of automated data to be processed and stored in foreign data processing systems."[217] Eric Novotny discusses "units of information coded electronically for processing by one or more digital computers which transfer or process the information in more than one nation-state."[218] Pool and Solomon refer to "computer communication networks ... digitalized transmission enabling voice and data to be

---

[216]Fishman, Introduction to Transborder Data Flows, 16 Stan. J. Int'l. (1980).

[217]Pac. Telecom. Council Conf. Proc. January 1980, p. 31.

[218]Eric Novotny, "Transborder Data Flows and International Law: A Framework for Policy Oriented Inquiry," 16 Stan. J. Int'l. 143-44 (1980).

handled in a single mixed stream of data."[219] Antonelli speaks of "international flow of computer data."[220] Documents of the Intragovernmental Bureau for Informatics discuss "transmission of data over telecommunications circuits."[221] Lemoine defines transborder data flow as "international information trade in a computer generated and machine readable format."[222] This definition includes all computer to computer, computer to human, and human to computer communication.

The Bing report, unlike other works on the subject, addresses the ambiguities in definition. Most other writings merely assume that the reader understands the problem well enough to ignore the definitional difficulties. Bing includes in his report on legal issues all transport of "data" which means any "representation of information" over "telecommunications" -defined by the Telecommunications Union as wire, radio, optical or other electromagnetic means. Bing, however, limits his discussion to "all computer services capable of accepting written material" including electronic mail, information retrieval, teledocuments, and data processing. This definition excludes voice and image transmissions.[223]

No doubt exists that the new ferment about transborder data flow has arisen from the convergence of computer technology, which stores and processes information, and communications technology which permits rapid dissemination of this information to all parts of the globe by satellite, undersea cables or conventional radio. The various definitions of transborder data flow fail to discriminate with respect to the type to transmission; some descriptions include the transport of computer tapes across national

---

[219]Pool & Solomon, "Intellectual Property and Transborder Data Flows," 16 Stan. J. Int'l. 114-15 (1980).

[220]C. Antonelli, "Transborder Data Flows and International Business," 5 (Paris: Organization for Economic Cooperation and Development, June 2, 1981).

[221]Intergovernmental Bureau for Informatics, Issues on Transborder Data Flow Policies (Rome: Documents on Polices for Informatics, SPIN-230 Green Series, September 1979).

[222]Lemoine, "Transborder Data Flows," Information Systems Magazine (Spring 1979) at 30.

[223]J. Bing, P. Forsberg, and E. Nygaard, "Legal Issues Related to Transborder Data Flows," (Paris: Organization for Economic Cooperation and Development, June 2, 1981).

boundaries by conventional transportation methods, such as a courier taking the tape by commercial air carrier. Definitions in the work of Mark Feldman and David Garcia are representative of a flexible, expansive approach:

> Man's rapidly developing ability to transfer information across national boundaries has become a crucial component in our increasingly integrated world economy. The advent of the computer has revolutionized man's capacity to store and process information. Simultaneously, man's capacity to transmit information has dramatically increased by a variety of telecommunication innovations, including increasingly effective cable transmissions and orbiting satellites. Together, these two technologies have resulted in a transborder data flow essential to expanding international economic development.[224]

---

[224]Feldman and Garcia, "National Regulation of Transborder Data Flows," 7 N.C. J. Int'l & C.R. 1 (Winter 1982).

Appendix C

Historically, the Data Protection Act of the State of Hesse (West Germany) was earliest law (1970) which dealt with the privacy and security of computer processed data. This legislation formed the basis of the guidelines adopted by the Organization for Economic Cooperation and Development (OECD) in September 1980. These guidelines were developed by the OECD in an effort to provide a unified approach to assuring an individual's privacy is protected across national borders.[225] The guidelines were formed in an effort to encourage voluntary compliance with privacy laws. This was the first multilateral action of its kind; before this document was developed, there really was no unified approach to controlling transborder data flow. The support for the guidelines is evident by the 24 signatory nations that have passed laws regulating data flow.[226]

As taken from Geza Feketekuty, Jonathan D. Aronson, "Meeting the Challenges of the World Information Economy," World Economy, 7 (March 1984):

> To date, the Organization for Economic Cooperation and Development has been most active in addressing transborder data flows. In connection with this work,

---

[225]Joseph L. Sardinas, Jr., Susan Merrill Sawyer, "Transborder Data Flow Regulation and Multinational Corporations," Telecommunications (November 1983): 59.

[226]Ibid.

> the United States in early 1982, put forward a proposal for a "Data Declaration" that might be adopted by member countries. The declaration would commit member governments to best efforts to maintain the international flow of data. At the same time, it recognizes the right of individual governments to safeguard legitimate social objectives such as privacy access to critical data, national security and cultural integrity. Governments would commit themselves to pursue their own national social objectives in each of these areas in a manner that would minimize any interference with the freest possible flow of information and they would also commit themselves to work out any problems that might arise in individual cases through a consultative process.
>
> The Data Declaration, if adopted, would provide a halfway base between no international rules and fully developed international rules covering transborder data flow. It would provide a pragmatic basis for solving problems while many of the issues remain undefined. Over the longer term, it would provide a basis for identifying the key issues that pose problems for international commerce and for which additional rules would be desirable.

Extending the privacy right of the "natural person" to cover the "legal person" (corporations) would have a great impact on the ability of the multinational corporation to operate internationally. The growth of the multinational corporation is attributable to the economies of scale available from the internalization of many activities and to the ability of the corporation to concentrate groups of complementary factors quickly, at a point of geographic space, to cooperate with local, immobile resources. The flow of information between the head office and its subsidiaries or affiliates follows a unique route which parallels that of international trade. Very little

information flows between the different associates. The interruption of this flow would have a significant impact throughout the world.[227]

The new privacy right would, for example, require:

1. Publication of the existence and nature and/or licensing of all bases held by corporation / organizations on each other.

2. Giving rights to corporations to inspect, challenge, demand corrections, and delete data about them on other corporate files.

3. Giving them rights to limit dissemination and/or use of data on them for purposes of which they have not been notified.

These requirements would have an affect on marketing, product development, pricing, and competition, both nationally and internationally. In addition, long term marketing policies presuppose the availability of highly sophisticated information on current or prospective client undertakings. If data are not kept secret, many problems would be created such as mergers, disintegration, absorption, etc.[228] These laws restrict information for the protection of privacy, not the handling of information. Some differences still exist among countries on what terms and conditions need to be attached to TBDF to ensure

---

[227]Demetri Tsanacas, "The Transborder Data Flow in the New World Information Order: Privacy or Control," Review of Social Economy 43 (December 1985): 364.

[228]Ibid.

privacy, but no one seriously questions the rights of governments to act on these matters and use their powers to the disadvantage of foreign concerns.[229] Most corporations have learned to deal with these restrictions and not complain much about them.[230]

The 1980 Organization for Economic Cooperation and Development guidelines on information gathering state the following:

. The collection of data is limited to necessary information obtained by lawful and fair means, and where appropriate, by consent of the data subject.

. Personal data must be accurate, complete, up-to-date, and relevant to the reasons for their use.

. The intended use of the personal data is to be specified at the time of the data's collection.

. Disclosure must be compatible with the purpose for which data were collected and by the authority of law.

. Reasonable security safeguards must be taken against loss or unauthorized access, destruction, use, modification, or disclosure of the data.

. There should be a general policy of openness as to the existence and nature of the personal data held by

---

[229]Geza Feketekuty, Jonathan D. Aronson, "Meeting the Challenges of the World Information Economy," World Economy 7 (March 1984): 83.

[230]Ibid., p. 70.

controllers.

. Data subjects may obtain data relating to them within a reasonable time and in intelligible form, and they have the right to challenge the accuracy and relevance of the data, and if successful, to have data erased, completed, or amended.

Appendix D

For the purpose of enacting new specific criminal offenses concerning computer related crime and/or utilization of existing criminal offenses in respect of 'property', a number of states have created new, or amended existing, statutory definitions of 'property' in order to include various intangibles such as information, financial instruments, data, computer data, computer software, computer programs, electronically produced or processed data, electronic impulses. These states include Alaska, Arizona, California, Colorado, Connecticut, Delaware, Florida, Georgia, Idaho, Iowa, Massachusetts, Michigan, Minnesota, Missouri, Montana, Nevada, North Carolina, North Dakota, Oklahoma, Pennsylvania, Rhode Island, Tennessee, Utah, Virginia, Wisconsin and Wyoming.

Many of these enactments tend to copy the form of previous enactment in other states and it is not certain to what extent any studies where undertaken concerning the implications of ascribing a property status to information.[231]

---

[231]Peter Robinson, "Telecommunications, Trade and TBDF," Telecommunications Policy 11 (December 1985): 317.

Appendix E

As Taken From J. Basche, "Information protectionism," Across the Board, (September 1983):

Modern electronics has transformed the world into a Global Village, as Marshall McLuhan told us some time ago. Perhaps there is no better proof than the well-known example of Malmo, the Swedish community whose fire-alarm system was linked to a data base in Cleveland, Ohio. When an alarm went off in a building in the Swedish community, the computer in Cleveland supplied fire officials in Malmo with data on the size of the burning structure, the materials of its construction, what the premises were used for, any dangerous chemicals or products stored in the building, and so forth. The information was transmitted by satellite, within seconds.

All this made the town of Malmo very much dependent upon the good will of the United States Government -- and very nervous. If the U.S, should cut off data flows to Sweden for some reason, the community could be in deep trouble. Why would anyone in Sweden worry about an embargo on information? In 1982, the United States Government embargoed certain strategic exports to the Soviet Union by American firms and their overseas affiliates. At the time, foreign leaders who knew their countries had vast amounts of

economic and other important data stored in the U.S. began thinking and asking themselves questions. What if the United States Government, for political objectives of its own, were to embargo all exports to their countries, including the return of data stored in the United States?

Appendix F

As taken from Joan E. Spero, "Barriers to International Information Flows," Telecommunication (November 1983), Geza Feketekuty, Jonathan D. Aronson, "Meeting the Challenges of the World Information Economy," World Economy 7 (March 1984), and J. Basche, "Information Protectionism," Across the Board 20 (September 1983):

In the United States, the merging of communication and computer technologies is seen as making it more difficult to separate and regulate value added services. In 1981, as part of the Second Computer Inquiry, the Federal Communications Commission made a distinction between 'basic' and 'enhanced' services. A 'basic' service was defined as a common carrier offering of transmission capacity for the movement of information (for example, telephone or telex service). An 'enhanced' service is any service offered over common carrier transmission facilities which provides the customer with additional, different or restructured information or which permits customer interaction with stored information (for example, videotex or teletex services).

In 1985, the FCC decided (FCC 85-585) to maintain its regulatory authority over basic communications, but that enhanced services would no longer be regulated. The Federal Communications Commission decided that de-regulation of enhanced services should take place at both international and domestic levels. This move heightened concerns of foreign telecommunication authorities that U.S. companies would use the decision to resell or share the use of leased-line capacity (two communications activities which the Federal Communications Commission includes in its definition of services it would cease to regulate). By implication, private companies would have been allowed to act as communication carriers, a strict prohibition under international communications law.

At the same time, this extension caused considerable alarm among U.S. companies fearing that, without direct regulatory control over enhanced services by Government, their international operations might allow foreign communication monopolies to play them off against each other. This action also provoked fears that foreign Postal, Telephone and Telegraphs might curtail or eliminate the availability of flat-rate international leased-line

services. Many countries assign telecommunications functions to government-owned postal, telephone and telegraph companies (PTTs); the PTTs usually have a monopoly on such services. Often, they can choose which competing services will be linked in an international network with their domestic facilities. They can also decide what equipment will be used in their domestic operations and in their international linkages.

Further, governments controlling the Postal, Telephone and Telegraphs can use their regulatory authority and lawmaking powers to discriminate in favor of their own telecommunications services and against potential foreign competitors, ie: if a government wants to build up its manufacturing capacity in computers or telecommunications equipment, it may require all potential users, including its own Postal, Telephone and Telegraph, to buy locally made equipment, or it may establish high tariffs for equipment purchased abroad. Brazil, requires government approval for any company to purchase computer hardware and software. If such equipment or software is available locally it withholds approval for foreign purchases.

The Federal Communications Commission fueled tensions with foreign communication monopolies by ignoring the realities of the international communications environment; attempting to extend its domestic deregulatory policies to the international communications marketplace. The proposed deregulation policy failed to recognize that in most countries, state owned monopolies control the foreign end of all circuits leaving the USA. International decisions cannot be made unilaterally, but are matters for bilateral negotiation with every other country. For a policy of competition to have any practical application, it must be accepted by the monopoly communications partner -- a most unlikely development.

Foreign Postal, Telephone and Telegraphs disliked the decision for at least two reasons. First, they saw it as an attempt by the United States to impose its free market philosophy on their economies. Second, they did not, for the most part, accept the distinction between basic and enhanced services. Since most Postal, Telephone and Telegraphs were interested in maintaining their control over these new areas, they perceived the attempt to divide the field as a threat to their monopoly.

Despite FCC statements that it intended no unilateral action, foreign governments responded angrily, and threatened privately to eliminate leased lines or make them available only at usage-sensitive rates. It was not clear whether the PTTs were legitimately concerned or whether they

were using the FCC decision as a justification for discriminatory policies.

Exchanges of letters between the Federal Communications Commission, the United States Department of State and the foreign PTTs defused and postponed a direct confrontation, but it also clearly indicated the importance of reconciling conflicting philosophies on regulation in this crucial area.

The ability of the Federal Communications Commission to grant or withhold reciprocal access to foreign entities in the U.S. market is a dangerous tool, inviting further retaliation. Therefore, it is seldom used.

Appendix G

The Trade Act of 1974 Pub. L. No. 94-618, 89 Stat. 1978 (codified as 19 U.S.C. S 2411 (1982)) Section 301 gives the President broad powers of enforcement. It authorizes "appropriate and feasible action" to retaliate against all types of situations. Section 301(a)(1)(A) authorizes action where the United States wants to enforce its rights under a trade agreement.[232] A broader authorization is contained in section (a)(1)(B)(i), which addresses a situation where the subsidies are inconsistent with the provisions of, or otherwise deny benefits to the United States under any trade agreement.[233] The International Trade Commission has constructed this provision to show that where subsidies have the effect of denying rights under agreement, even while not explicitly denying these rights, the United States may take enforcement action.

Relying on either of these two provisions can circumscribe the Presidential power by the very agreements in which the United States bases its claim. Many international trade agreements, including the General Agreement on Tariffs and Trade, have mandatory dispute resolution visions. In such a case, the President would be compelled to withhold any section 301 action until after a determination has been reached in accordance with such a provision. A claim by United States that it was attempting to enforce Brazil's obligations to the United States under either the General Agreement on Tariffs and Trade or the Subsidies Code would be subject to a determination by an independent panel of whether there was a violation.[234] If the panel found no violation, the President could ignore the decision, but such a course action seems unlikely. The President would not want to set a precedent of noncompliance with the General Agreement on Tariffs and Trade recommendations because the next panel's recommendation may

---

[232]Trade Act of 1974 Pub. L. No. 94-618, 89 Stat. 1978 S 301(a)(1) (codified at 19 U.S.C. S 2411(a)(1) (1982)).

[233]Trade Act of 1974 Pub. L. No. 94-618, 89 Stat. 1978 S 301(a)(1)(B)(i) (codified at 19 U.S.C. S 2411(a)(2)(A) (1982)).

[234]General Agreement on Tariffs and Trade, opened for signature 30 October, 1947, 61 Stat. pts. 5, 6, T.I.A.S. No. 1700, 55-61 U.N.T.S., art. 10.

be favorable to the United States.[235]

A third provision, section 301(a)(1)(B)(ii), authorizes action where a subsidy is "unjustifiable, unreasonable or discriminatory and burden or restricts United States commerce" (emphasis added).[236] Section 301 defines "unjustifiable," "unreasonable," and "discriminatory" broadly.[237] The injury test to establish a burden on United States commerce is much more liberal than that to establish injury to the domestic industry, and there is no requirement that the entire U.S. industry be burdened.[238] Even under this provision though, Presidential action is restricted. If the President imposed a higher tariff on Brazil, for example, he would be violating the United States' own obligation under the GATT to treat all signatories equally, under the "most favored nation" obligation. Brazil may then be able to retaliate against the United States for such violation. Similarly, the President must take diplomatic and military considerations into account. The result is that remedies under section 301 are usually framed to be as painless as possible, and therefore are usually ineffective.[239]

---

[235]Anne Piorkowski, "Brazilian Computer Import Restrictions: Technological Independence and Commercial Reality," Law & Policy in International Business 17 (1985): 641.

[236]Trade Act of 1974 Pub. L. No. 94-618, 89 Stat. 1978 S 301(a)(1)(B)(ii) (codified at 19 U.S.C. S 2411(a)(2)(B) (1982)).

[237]Ibid., Sec. 301(b).

[238]Anne Piorkowski, "Brazilian computer import restrictions: technological independence and commercial reality," op cit.

[239]Ibid.

REFERENCES

List of References

"A Storm That Could Snap Intelsat's Monopoly." Business Week 1 August 1983.

Antonelli, C. "Transborder Data Flows and International Business." (Paris: Organization for Economic Cooperation and Development, [June 2, 1981]).

Balassa, B. "Interest of Developing Countries in the Uruguay Round." World Economy 11 (March 1988): 39-47.

Basche, J. "Information Protectionism." Across the Board 20 (September 1983): 33-39.

Bing, J., Forsberg, P. and Nygaard, E. "Legal Issues Related to Transborder Data Flows." (Paris: Organization for Economic Cooperation and Development, [June 2, 1981]).

"Brazil's Ban on Small Computer Imports Aids Domestic Firms But Drives Prices Up," Wall Street Journal, 4 October 1982.

"Brazil's Computer Program Takes a Sudden Outward Turn." Electronics Week August 1985.

"Brazil Curbs Computer Competition," New York Times, 8 October 1984.

"Brazil's Prickly Computer Policy," New York Times, 29 April 1984.

"Brazil's Protected Computers; U.S. Threat Spurs Rift," New York Times, 16 September 1985.

"Brazil's Restrictions on Minicomputers are Here to Stay." Business Latin America 18 January, 1984.

"Brazil Says 'No Thanks' to Foreign Computers." International Management September 1984.

"Brazil, Tax: New Informatics Law." International Business Law March 1985.

"Brazil-U.S. Relations Spiral Downward; Trade Relations Affected." Business Latin America 27 June 1984.

"Business Outlook." Business Latin America 26 September 1984.

"Canadian Firm Penetrates National Monopoly of Brazilian Informatics." Business Latin America 4 July 1984.

Carey, B. "Re-Writing the Rules of Trade." American Shipper 28 (October 1986): 42-43.

Chandran, R; Phatak, A; Sambharya, R, "Transborder Data Flows: Implications for Multinational Corporations." Business Horizons 30 (November/December 1987): 74-82.

"Citicorp's Satellite Challenge," New York Times, 24 March 1983.

Collier, H. H. "Dataflow Across National Borders." Data Processing 27 (September 1985): 9-12.

"Competing With Giants," Washington Post, 13 July 1983.

Coombe, G.W., Kirk, S.L. "Privacy, Data Protection and Transborder Data Flow: A Corporate Response to International Expectations." The Business Lawyer 39 (November 1983): 33-66.

Dabbs, P. H., Cassidy, F., Long, D., Watson, A., Reid, M., "The World of Telecommunications," British Telecom Journal 5 (Spring 1984): 18-19.

Del Fiol, R.A., Guisard Ferraz, J.E. "National Telecommunications Planning in Brazil." Telecommunications Policy 8 (September 1985): 229-239.

Feldman and Garcia, "National Regulation of Transborder Data Flows." 7 N.C. J. Int'l & C.R. 1 (Winter 1982).

Feketekuty, G., Aronson, J.D. "Meeting the Challenges of the World Information Economy." World Economy 7 (March 1984): 63-86.

Fishman, "Introduction to Transborder Data Flows." 16 Stan. J. Int'l. (1980).

"Foreign Firms Excluded from Brazil's Drive to Build Minicomputers." Business Latin America 4 January 1978.

General Agreement on Tariffs and Trade, opened for signature

30 October, 1947, 61 Stat. pts. 5, 6, T.I.A.S. No. 1700, 55-61 U.N.T.S., art. 10.

Guidelines on the Protection of Privacy and Transborder Flows of Personal Data (Paris: CD Secretariat, 1981); and Convention for the Protection of Individuals with Regard to Automatic Processing of Personal Data, European Treaty Series No. 198 (Strasbourg: Council of Europe, 1981).

Hein, J. "What Will the GATT Beget?" Across the Board 22 (September 1985): 29-37.

"High-Tech Trade Barrier in Brazil Now a Success," Washington Post, 1 October 1985.

Holden, D. "International Data Flows." United States Banker 96 (November 1985): 60.

Hurni, B. "How to Use GATT Effectively." EFTA Bulletin 28 (January-March 1987): 17-19.

"IBM Mounts Publicity Drive in Brazil Hoping Computer Restrictions Will End," Wall Street Journal, 13 January 1984.

Intergovernmental Bureau for Informatics, Issues on Transborder Data Flow Policies (Rome: Documents on Polices for Informatics, SPIN-230 Green Series, September 1979).

International Trade Report 158 (1984).

International Trade Report 321 (1984).

Johnson, A.W. "Broadcasting and the Reflection of a Society." Queens University, Canada, (1984).

Kissinger, H. "U.S. Must Take Lead in Revamping World Trade Policy," International Herald Tribune, 29 October 1984.

Lemoine, "Transborder Data Flows." Information Systems Magazine (Spring 1979).

Levinson, M. "Twelve Protectionist Traps." Across the Board 22 (September 1985): 24-28.

Long Range Goals in International Telecommunication and Information: An Outline for United States Policy. (Washington: U.S. Government Printing Office, 1983).

McCrohan, K. F.; Lowe, L. S. "Non-Tariff Barriers to

International Data Flow." Industrial Mgmt & Data Systems (May/June 1988): 8-11.

McGovern, G. "The Information Age, New York Times, 9 June 1977.

Moore, S. "International Managers Must Face the International Communications Web." Data Management 22 (June 1984): 30-32.

Naisbett, J. Megatrends. New York: Warner Books, 1982.

Nayyar, D. "Some Reflections on the Uruguay Round and Trade in Services." Journal of World Trade 22 (October 1988): 35-37.

Neale, T. "GATT Offers Hope Against Protectionism." Journal of Commerce and Commercial 364 (5 June 1985): 3a-4.

Neto, E. S. "GATT and the Brazil-US Technology Conflict." International Financial Law Review 8 (January 1989): 38-40.

"New Law Affects Brazil's Big 'Informatics' Market." Business America 10 December 1984.

"_____" New York Times, 18 November 1986.

Novotny, E. "Transborder Data Flows and International Law: a Framework for Policy Oriented Inquiry." 16 Stan. J. Int'l. (1980).

O'Connor, W. F. "The International Tax Implications of Transborder Data Flow." International Tax Journal 15 (Winter 1989): 73-85.

Pac. Telecom. Council Conf. Proc. January 1980.

Piorkowski, A. "Brazilian Computer Import Restrictions: Technological Independence and Commercial Reality." Law & Policy in International Business 17 (1985): 619-645.

Pool & Solomon, "Intellectual Property and Transborder Data Flows." 16 Stan. J. Int'l. (1980).

"President to Announce Clearer Trade Policy Stance on Opening Markets Abroad." International Trade Reports (BNA), 11 September 1985.

Robinson, P. "From TDF to International Data Services." Telecommunications Policy 11 (December 1987).

Robinson, P. "Telecommunications, Trade and TDF." Telecommunications Policy 9 (December 1985).

Sapir, A. "North-South Issues in Trade in Services." World Economy 8 (March 1985): 27-32.

Sapir, A., Lutz, E. "Trade in Services: Economic Determinants and Development Related Issues." World Bank Staff Working Paper No. 410 (Washington: World Bank, 1981).

Sardinas, Jr., J.L., Merrill Sawyer, S. "Transborder Data Flow Regulation and Multinational Corporations." Telecommunications (November 1983): 59-63.

Sauvant, K.P. "Transborder Data Flows: Importance, Impact, policies." Information Services & Use 1 (April 1984): 3-30.

Sauvant, K.P. International Transactions in Services : The Politics of Transborder Data Flows. Boulder : Westview Press, 1986.

Schatz, W. "Communications: Airing the Issues." Datamation 32 (15 January 1986): 30-35.

Searing, M.E. "The Uruguay Round - Up and Running." Business America 110 (May 8, 1989): 11-12.

Sheehy, T. "Transborder Data Flow - An Issue with Global Implications." Data Management 22 (November 1984): 28-29.

Spero, J.E. "Barriers to International Information Flows." Telecommunication 17 (November 1983): 67-69.

Stone, F. "Canada, the GATT, and the International Trade System." The Institute for Research on Public Policy, Montreal, 1984.

Sullivan, W.J. "Outlook for Telecommunications: Impacts on Labor, Trade and Economic Development." US Department of Commerce (February 1985).

"Superminis Next Brazilian Target." Electronics 31 May 1984.

"Technology Debate: Moves to Control Information Industry Split Brazilian Politicians, Businessmen," Washington Post, 29 August 1984.

Trade Act of 1974 Pub. L. No. 94-618, 89 Stat. 1978 S 301(a)(1)(codified at 19 U.S.C. S 2411(a)(1) (1982)).

"Transcript of Speech to Business and Government Leaders," New York Times, 24 September 1985.

"Trends in International Trade, a Report by a Panel of Experts." General Agreement on Tariffs and Trade, Geneva, October 1958.

Tsanacas, D. "The Transborder Data Flow in the New World Information Order: Privacy or Control." Review of Social Economy 43 (December 1985): 357-371.

Unclassified U.S. Comm. Dept. Doc., Oct., 1984, subject: Translation of Brazilian Law No. 7.232, Oct. 29, 1984 (on file at the offices of Law & Policy in International Business).

United Nations, Transborder Data Flows and Brazil. (New York: United Nations Centre on Transnational Corporations, 1983).

United Nations, Transnational Corporations and Transborder Data Flows: A Technical Paper. (New York: United Nations Centre on Transnational Corporations, 1982).

U.S. National Study on Trade in Services, A Submission to the GATT. Office of the U.S. Trade Representative, (December 1983).

Viravan, A. "Let's Rewrite the Rules." Far Eastern Economic Review 143 (March 9, 1989): 80-81.

Williamson, J. "Social, Economic Inequities Fuel Arguments for Data Flow Strictures. "Communication Age 2 (June 1985): 38-39.

General References

Antonelli, C. "Multinational Firms, International Trade and International Telecommunications." Information Economics and Policy 1 (1984): 333-343.

Armbruster, W. "A GATT Founder Remembers Its Beginnings With Regret." Journal of Commerce and Commercial 374 (30 October 1987): 1a-2.

Bortnick, J. "International Policy Concerns in Congress." Bulletin of the American Society for Information Science 13 (June-July 1987): 32-34.

Briner, R.F., Ewer, S.R. "Financial Information Flow and Transborder Restrictions." (Between U.S. Corporations and Their Foreign Affiliates) Journal of Systems Management 38 (August 1987): 32-36.

Fair, J.E. "The Regulation of Transborder Data flows: An International Law Perspective." Gazette 40(1987): 21-38.

Freeman, H.L. "The Information Revolution: Trade in Services." Vital Speeches 52 (1 July 1986): 572-575.

GATT Activities 1984. General Agreement on Tariffs and Trade, Geneva, June 1985.

Gibbs, M. "Continuing the International Debate on Services." Journal of World Trade Law 19 (May-June 1985): 199-218.

Grejuras, F.M., Sizer, R. "Impact of Transborder Data Flow Restrictions on Cash Management Services." Information Age 9 (January 1987): 17-22.

Harman, B.M. "Functioning of the GATT System." Business America 10 (22 June 1988): 16-17.

Jussawalla, M., Cheah, C.W. "The Calculus of International Communications: a Study in the Political Economy of Transborder Data flows." Littleton, CO: Libraries Unlimited, 1987.

Kerr, S. "A Few Rays of Light South of the Border." Datamation 33 (15 March 1987): 26-29.

Kirsch, W. "Transborder Data flows: A Current View." London: International Institute of Communications, 1983.

Knoppers, J. "The Rule of National Boundaries in the Information Age." Bulletin of the American Society for Information Science 12 (August-September 1986): 6-8.

Konoshima, S. "Barriers and Prospects for Transborder Data Flow." Bulletin of the American Society for Information Science 13 (April-May 1987): 32-34.

Mowlana, H. "International Flow of Information: A Global Report and Analysis." Reports and Papers on Mass Communication, No. 99. Paris: UNESCO, 1985.

O'Connor, W.F. "Information - The Next Trade Problem? Data Communications 15 (March 1986): 188-192.

Paradi, J.C. "What are the Issues in Transborder Data Flow?" Canadian Datasystems 15 (April 1983): 71-77.

Pipe, G.R. "International Information Policy: Evolution of Transborder Data flow Issues." Telematics and Informatics 1 (1984): 409-418.

Ploman, E.W. "Transborder Data Flows: The International Legal Framework." Computer/Law Journal 3 (Summer 1982): 551-562.

Renaud, J.L. "A Revised Agenda for the New World Information Order: The Transborder Data flow Issue." Gazette 34 (1984): 117-135.

Renaud, J.L. "A Conceptual Framework for the Examination of Transborder Data flows." The Information Society 4 (1985): 145-185.

Samiee, S. "Transnational Data Flow Constraints: A New Challenge for Multinational Corporations." Journal of International Business Studies 15 (Spring-Summer 1984): 141-150.

Schlundt, V. "Transborder Data flow and its Importance in the International Arena." Information Age 7 (April 1985): 67-75.

Shiller, D. Telematics and Government. Norwood, N.J.: Ablex, 1982.

Spero, Joan E., "Opportunities for LDCs in GATT Services

Talks." Financier 12 (October 1988): 41-43.

Tjoumas, R., Surprenant, T.T. "Trends in International Informational Issues." Communication Quarterly 35 (Summer 1987): 238-253.

"Transborder Data Flows and Brazil." United Nations Center on Transnational Corporations. United Nations, New York, 1983.

Trauth, E.M. "An Integrative Approach to Information Policy Research." Telecommunications Policy 10 (March 1986): 41-50.

Tumlir, J. "Protectionism, Trade Policy in Democratic Societies." Washington, D.C., AEI 1985.

Turbett, P. "Banks Keep the Barrier Watch to Maintain Global Data Flow." American Banker 150 (4 February 1985): 12-15.

Tussie, D. The Less Developed Countries and the World Trading System: A Challenge to the GATT. St. Martin's Press, New York, 1987.

United Nations, Transborder Data Flows: Access to International On-line Data-base Market. (New York: United Nations Centre on Transnational Corporations, 1983).

Wigand, R.T. "Transborder Data Flow: Its Impact on Business and Government." Information Mgmt Review 1 (Fall 1985) : 55-65.

Wigand, R.T., Shipley, C., Shipley, D. "Transborder Data Flow, Informatics and National Policies." Journal of Communication 34 (Winter 1987): 153-175.

Wilson, L.J., Al-Muhanna, I. "The Political Economy of Information: The Impact of Transborder Data flows." Journal of Peace Research 22 (1985): 289-301.